The Builder.

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Architecture in the City of London.

WHILST lamenting recently the fact of the slight infusion of art into buildings, chiefly in the growing suburbs of London, wherein, mainly, it unavoidably was that the character of the national taste in regard to architecture was found expressed,—and also that our profession had, in proportion to the amount of building-work, few opportunities of using, in any manner whatever, the qualifications claimed as possessed,—we, of course, by no means disregarded what had been done of a different description in the country districts and in London, and the provincial towns. Indeed, reference to the great development of art which is going on in connection with buildings of a public character, and the larger mansions, and with some even of the houses of moderate size, has been often made by us when we have been seeking in various ways to contribute to the right and popular appreciation of our profession and of architecture. Further evidence, therefore, to show what might be effected with the co-operation of the public, and by the better diffusion of taste and knowledge, might appear needless; but the truth is, the art-character collectively of the works referred to is very little known: the mind can only gather it from units, numerous, but which are distributed over the land, or hidden in holes and corners. Since the time of Nash—as we have had heretofore occasion to observe—there has been hardly anything in the way of attempt at true street architecture,—that is to say, the kind of art in the buildings of towns, wherein the individual structure, the influence of one building on another, and the general disposition of lines of *route*, and of spaces, and masses on plan, for scenic effect, are elements all thought of as combining to the result, whether general or particular. In this circumstance real inferiority lies; and in it is involved one reason why our architects' works are rated so low as they sometimes are. Not denying that the architectural deficiencies of London are great, we believe that the merits of the works of the last few years—say six or eight,—are not yet appreciated as they deserve to be by the public, and especially by a section of the press, which too readily assumes the inability of architects to answer a national demand. Could there have been the slightest ground for this latter belief, it would be disposed of by recollection of the designs for the Government Offices, at least, in the mind of any one who took the requisite pains to examine that remarkable collection of works,—made, too, on the basis of conditions which were an erroneous statement of the problem, and thereby repeating the falsity of position against which exertions for progression in architectural art have in this country long had to contend.

We maintain that the public encouragement and co-operation do not accord with the professional qualifications and efforts; and that, whilst a system of education in our body, having some reference to the field of an architect's duties, cannot be delayed, it is the popular education and taste in art architectural which require to be looked after most at this juncture, and as essential to the proper condition for cultivation of that very field. The question of this education is one as much deserving the attention of architects as that of the professional education; for, it must be clear to any one observant of the course of art-production in our day, that natural expansion of the qualifications is checked by the necessary considerations on the part of the profession, of self-interest, or the leaning towards the opinions or the prejudices,—whether of the clergy, the constituted authority for the time representing the public, or the private speculator, or British householder, who pays the cost, and asserts, therefore, the prerogative of doing what he likes, even though it be to the public injury.

Still, it has happened that a considerable number of opportunities have been afforded of late for the production of architectural art; and, though many of those in our towns, have arisen as much from the increase in the number of public companies—especially insurance companies, which have required as a matter of business a striking character of local habitation—as from any very marked change popularly in the perception of the art,—the circumstance referred to has been valuable; for, it has permitted a demonstration that was wanted, and will itself do much to educate the public eye and taste. In the City of London the building-work of an architectural character latterly has grown to what now comprises a large amount of good art; and whilst we write, many buildings are in course of completion which carry forward the increasing measure of progression. Some of these works have been both mentioned and illustrated in our pages; but, collectively and in many particulars, they now deserve more prominent notice than we have given of them.

Most unfortunate is it for their estimation, and the influence which we have spoken of, that some of the best of the works in the City are placed in situations where it is not easy to appreciate their general effect, or even to see any elaboration or beauty of their details. In Mincing-lane, the front of Clothworkers' Hall, designed by Mr. Angell, is now completed; but, though the site is near to Fenchurch-street, it is impossible to get a proper general view, or to observe, unless by ascending to top-rooms of the houses opposite, much of that which appeared in the illustration in our last volume. The case is much the same as to the offices of the Royal Insurance Company, by Mr. John Belcher, at the corner of Clement's-lane and Lombard-street, also given in our last volume where the building appears very different to the reality, simply because it is impossible for perspective drawing to depict any object as this one presents itself to the eye. The chambers in Mark-lane, by Mr. N. T. Randall, are in much the same case; and so is the warehouse of Messrs. Munt, Brown, and Co. in Wood-street, by Mr. G. S. Clarke, which towers to the height of several stories above the adjacent buildings, and has a *cornicione* with cantilevers, upper members of great projection, and details generally, as those of the frieze with window-openings, of which the character cannot be discovered from any obtainable standing-point. It may be that the site here has led to the uniformity which there is in the windows of the upper stories. The details of the basement and ground-story are excellent; and the doorway—an elaborate work—has considerable merit. It is doubtful whether cornices of very great projection, ever have the effect intended if they stop and return against the flanks at a short distance from the front: it is obvious by well-proved rule of art, that cornices should either stop against some projecting and loftier portion of the building, or encircle the whole mass on plan. In courts such as are common in the City, cornices different in character should be adopted: otherwise the light is much reduced. In the case of street-façades and buildings of great height, the requirement is that there should be the appearance of security—which there is not where the cornice overhangs, without seeming tie or counterbalance. We need not allude to the defects that have been so frequent structurally. With proper consideration, as well in design as in construction, the grand effect of the Italian cornice, as a feature in street architecture, might be generally realized.

It is not only in the second-class streets of the City that the architecture fails to convey its proper result. What are the main thoroughfares, and the chief localities for business, are little better adapted for the sites of lofty buildings—where the upper stories are designed not without regard to possibility of examination of their minute details, and under the idea that these will bear part in the general effect. There are buildings completed lately in Cornhill, and there may be others in progress in Leadenhall-street, in which good art is literally cast in the air for the delectation of the crows, rather than of the other stratum of life, or that current which surges at the terrestrial level. One must be an architect, or such a lover of art as is not the common product of the city of London, to stop at all and strain eyes and neck, to get with pain the effect which, it might be deemed one of the canons of art, requires conditions in the observer the very opposite of these of mind and body. Messrs. Sarl and Sons' new premises, by Mr. John Barnett, and buildings in that particular quarter between the western ends of Cornhill and Lombard-street, including the Colonial Life Insurance Office, by Mr. T'Anson, and the National Discount Company's Bank, by Messrs. Francis, in Cornhill, at the corner of Birchin-lane,—the latter illustrated in our first number of this year, and just completed,—are the whole of those more recent buildings which we are chiefly considering in this article, that can be considered as placed where they can be appreciated. The Discount Company's Bank, indeed, is unusually fortunate, not only inasmuch as there is adequate space in front, but because there is a broad foreground to it of flagged pavement—a feature seldom to be had in crowded cities, but one which is of the utmost value towards architectural character and dignity.

There is, however, one grand exception to the generalization of defects arising from site, of the City architecture—one that, after the remarks just made, the reader will have anticipated us in perceiving. We allude to the cluster of really admirable works—here, indeed, well disposed for architectural effect—which have grown up near the Bank of England. One of the best things that the City authorities have done, was the clearance of the triangular block of buildings in front of the Exchange—merit though there was in details of that work of Sir Robert Taylor,—and the appropriation of the site as a simple area of flagging. Let the effect that results from this simple provision be noted; and let us hope against hope, that at the eleventh hour, the one other chance, at St. Paul's, which there is of a similar character, and adornment to the City, may not be cast aside,—and for the eternal disgrace of the civic authorities, reason how they may. Remove the Globe Insurance Office, a banking-house or two perhaps, and some of the buildings at the angle of Princes-street and Mansion-House-street, and replace them with works of better design; and, after all that is said of "our architecture," there would be in the City of London a collection of structures and an architectural effect worthy of the capital of an empire. To estimate the progress that has been made, recollect that the whole of the works hereabout, except the Mansion-House and the Bank, and the churches by Hawksmoor and Wren, are works of quite recent date: note that imitative cement, and that kind of architecture of which King William-street is an example—where the stock of ideas seems to have been comprised in the disposition of columns "all in a row" on the level of the first-floor, often over the void of a shop-front, are in no degree found in the recent works,—are, it may be said, opposed to the universal principle of the existing art, and would be disused everywhere, if the public demand in some cases did not dominate; recollect that the architectural character of King William-street, of no very distant date, itself was a considerable step; and the conclusion is inevitable that our architecture progresses in spite of what we might almost call direct counteraction by the public, at a rate which does not contrast to our disadvantage with that of any period of history.

In the progress which there is, we find as

ever, that architecture moves or is retarded according as may be the growth of contemporary operations of improvement in other channels. The circumstances of the City of London, or deficient foresight in the authorities, stand in the way of the improvement of the street communications which is needed. The prosperity of the City, if not of the empire, is, we verily believe, in peril, so long as the traffic through and to the centre is increasing as it does enormously, and so long as the widths of streets are kept to what they were during the Middle Ages. The expression of the *architecture* of the City is checked by the same agencies; and the credit of the City, and of our art, accordingly, stands lower than either ought to do, for the efforts which are made, and the actual work that is done.

We propose now to examine what are the features which have become characteristic of the City buildings, and whereby what we regard as progression in architecture, has been lately expressed. It is first to be observed that even difficulties of the sites have tended, as such conditions ever ought to do in art, towards the distinctive character which becomes part of the merit. The largest area of window-surface that is consistent with strength, as well as architectural character in the superstructure co-existently with the shop-front, have been proved to be quite attainable without sacrifice of the commercial objects on the one hand, or the art-expression on the other. Regarding the matter of requirements along with effect, in many of the recently erected offices, the basement story is elevated for the sake of light, so much that its windows become an integral portion of the front; whilst at the same time the plinth and base-mouldings upon which so much depends, are not impaired in effect, but are rather treated so as to contribute in the highest degree to the expression of the whole. So far from area of wall-surface being regarded as essential, all the effect that could be desired is attained by narrow piers, without weakness, or as it is in the National Discount Bank, where the strength is well supplied by the piers of the principal or ground story, formed by three-quarter Doric columns, with rusticated blocks, clustered with pilasters. Frequently the slender piers are carried up to include the windows of several stories, under the same arch or lintel, as in the warehouse of Messrs. Hugh Jones and Co. 109, Wood-street, where the windows themselves are simple openings, with a slight cornice, and are separated from one another in the height by some kind of panelling. The design in this case has no remarkable merit, but the arrangement could be worked upon with advantage. Here we are referring to a range of openings; but in narrow fronts in the more important thoroughfares, where the ground-story is generally a shop, great improvement has been effected by the practice often recommended by us, and which has become general, of including a mezzanine, or an ordinary first-floor, under an arch, as part of what may be considered the shop-front. Not only is this carrying up of the shop-front, even where the brestsummer, without arch, is retained, favourable to the appearance of strength; but the structural arrangement, with the first-floor or gallery, practically increases both the available space and the effect internally, of the shop. Goods are now commonly exposed in these windows of the upper level; or, in confectioners' shops and *cafés*, a refreshment-room is provided there, advantageously. Three stories are treated on the same principle in several cases.

The appropriation of all the upper stories to business rather than to residence purposes, is becoming rapidly characteristic of the buildings in the City. Under the old arrangement, where everything was sacrificed for the frontage of the mere shop, we believe that in the case of many of the lofty premises in chief thoroughfares, the upper rooms were frequently unoccupied, or nearly so, whilst courts and alleys were teeming with the population, whose condition has been from time to time so sadly pictured in our own statements, and in the reports of Officers of Health. Not denying the accuracy of the statements, nevertheless, made to the Commission of Sewers, as to the superior sanitary state of the City, we cannot but desire for the moral health of the residential population which there must always be, that such buildings as include shops, or other business premises in the lower part, were more frequently planned as to the upper stories, for residences,—in fact, on the system of which the premises in Victoria-street, Westminster, are still the only example in the metropolis. In some of the mercantile establishments, the upper floors are appropriated somewhat in the manner referred to, for the people of the establishment; but the system of separate dwellings over shops, might be adopted frequently with advantage. The question of habitations for the clerks, and porters, and the working-classes to whom residence in the City, or ready access to it, is essential, must soon force itself on the attention of the City authorities; and, considering the large amount of unoccupied or unremunerative ground which there is in Victoria-street, the site of the Fleet Prison, Farringdon Market, and Smithfield, and the resources of space in other localities that we could name, the question ought already to have had better attention than we can see it has received. The tendency, however, by the buildings of the kind we have chiefly alluded to, seems to be to reduce the residential population to the *minimum*; and the improvement of the street communications, and the extension of railways, in or to the City, will one day be seen to have an importance, sanitarily and morally, which we have on previous occasions shown, but which seems to be still altogether insufficiently felt.

The existing system in new buildings, as to appropriation of the upper floors for offices with a separate entrance, is favourable to the symmetry and structural character of the front; though it does not diminish that tendency to great height in the buildings, which on some grounds, sanitary and æsthetic, is to be regretted. Messrs. Sarl and Sons' premises in Cornhill cannot, in the centre of the entire design, be much less than 90 feet to 100 feet in height, and would form one of the chief examples of the waste of art which we have referred to, were they not fortunately placed near the large area of which the general advantages have been already dwelt upon. The height of the centre, however, with the horizontal termination, appears to us, rather too great for that of the wings; whilst the massive cornice becomes a prominent exemplification of the error—as regards discontinuance along the return-walls, which we have spoken of. Other errors in this design, appear to us those of the precise equality—whether in the three major divisions of the front, or the subordinate parts filling in those divisions; wherefrom it results that proportion, which has been said to require always inequalities; and grouping, whereof the idea presenting itself is of the same kind, are seemingly not studied as they should have been. Nevertheless, the work is one of unusual merit; and the effort at bringing-in the two adjoining frontages—not unattended with difficulty (as the dimensions and requirements were not the same) is to be commended,—as tending in the right direction regarding the effect of what we have viewed *par excellence* as street architecture. Though the treatment of the shop-front is not precisely the example which we should choose to illustrate what we have said above, the great height of the brestsummer from the street level, and the very peculiarities which, as we have regarded them, are defects in some points of view, deduct from what would be the appearance of weakness. The interior of the shop, with its gallery and staircase and fittings, forms indeed a very successful piece of design: though there is a shop in the Poultry treated on a similar principle, which is almost equally happy in the result; and the chief idea may have been hinted at in shops in Regent-street years ago. In some of these latter cases it was carried into execution, or partly so, by alteration merely: the manner of this structurally is easy and obvious, but the variations in effect procurable are great.

Of the buildings of the City wherein the wall-surface is reduced to the *minimum*, and where yet good effect is obtained, perhaps the best example is that of the building in Fenchurch-street, appropriated to shops and offices, and designed by Mr. I'Anson. We did it hardly sufficient justice in noticing the drawing at the Architectural Exhibition. There are three stories, and an attic in the centre; and the whole front from street-level to cornice, may be described as five arches carried by slender piers having superimposed pilasters and detached shafts, whilst the wide openings are filled in each with a wooden mullion and transom for the window-frame,—the lower stories having also a slight iron column in the interspace. The lower stories have merely entablatures of the orders to separate the window-openings; and the arches of the upper story spring from detached shafts of iron. Somewhat greater strength is given at the angles, and the rain-water pipes are, as in the Colonial Insurance Office, made features in the design. Retaining the opinion that the *minimum* of wall-surface that is consistent with strength and the effect thereof, is here used, we cannot but refer to this design as an excellent illustration of the mode in which the present demands in buildings in the City may be met quite consistently with superior architecture. Suggestions, which we observed might be taken from the Elizabethan buildings, with their large area of window-opening, appear to have borne fruit. There may be good design with almost every sort of structural condition or commercial requirement; and proper study of models and authorities would generally point to something that would permit the reconcilement of all desired ends.

It is because the new buildings of the City manifest this healthful tendency,—that is to say, towards good and original art, co-existently with attainment of the demands commercial and structural—the *summum bonum* of good architecture—that we have thought them worthy of this prominent notice,—and in justification of what is certainly the architecture of our day, and of what we think to be the claims of our sometimes ill-requited, or publicly-maligned profession. In a future number we shall refer to features other than we have mentioned, which seem peculiar to the architecture of the time as exemplified in these new works, and more particularly describe some of the structures we have named, or several which we have had only in our recollection during foregoing general remarks.

THE DWELLINGS OF THE LABOURING CLASSES,

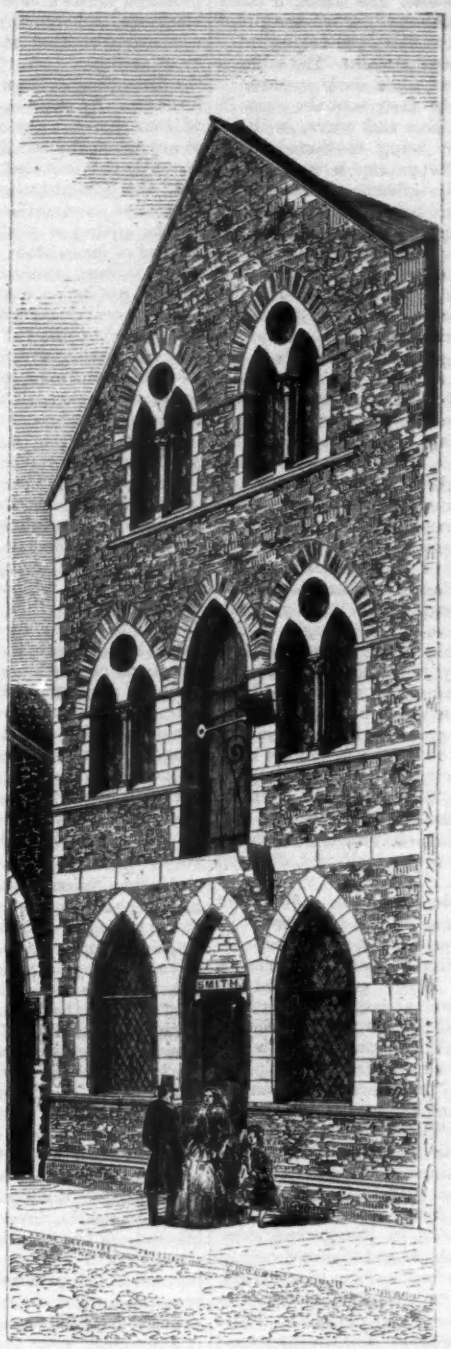
AND ENDEAVOURS TO IMPROVE THEM.

Amongst the papers necessarily curtailed in reading, at the Liverpool meeting of the National Association, on account of want of time, was one by Mr. Henry Roberts, F.S.A. on the dwellings of the labouring classes—their improvement, through the operation of Government measures, by those of public bodies and benevolent associations, as well as by individual efforts. Commencing with an historical sketch of what has been done for promoting this object since the public attention was directed to its urgent necessity, soon after the first appearance of the cholera amongst us in 1832, allusion is made to the suggestions of Mr. Sydney Smirke, published in 1834, and to the investigations into the sanitary state of the metropolis, made in 1837 by Dr. Southwood Smith, Dr. N. Arnott, and Dr. Kay, at the request of the Poor Law Board, which led, amongst other measures taken both in and out of Parliament, to the appointment, in 1842, of a royal commission to inquire into the state of large towns and populous districts.

The reports of this commission, taken in connection with those previously made by the Poor Law Board, formed the basis of various legislative measures.

The services rendered in furtherance of the object in question by the public press are there noticed, amongst which those of the *Times* and the *Builder* are not overlooked.

Passing on to the operations of societies established for improving the dwellings of the labouring population, of which upwards of twenty are named, tabular and other statements, drawn from their reports, are given, in order to show the results arrived at; and these form the basis of practical suggestions offered to those who have the management of such associations.



STREET ARCHITECTURE: WAREHOUSE, BRISTOL.
Mr. E. W. Godwin, Architect.

Mr. Roberts refers to his late residence of nearly five years on the Continent, for the recovery of health, as having afforded him the opportunity of obtaining such information, as well as promoting in other countries the object to which, since 1844, much of his time has been gratuitously devoted. His object, in the paper read at Liverpool, is to place on record what has been done, in order to facilitate the investigations of others, and particularly to aid them in referring to Acts of Parliament bearing on the subject, some of which, owing probably to their existence not being generally known, have led to no practical results whatever.

Soiree at the Manchester Athenæum.—A large assemblage of the friends of the Manchester Athenæum took place on Thursday evening in last week, in the Free Trade-hall. Among the guests present were Lord Stanley of Alderley (who presided), Lord J. Russell, the Hon. Judge Halliburton, Professor Aytoun, Sir James Brooke, Mr. Monckton Milnes and various other M.P.s', Mr. George Cruikshank, the Mayor of Manchester, and others. A great number of ladies occupied reserved seats in the body of the hall, and a considerable number of officers belonging to the regiments stationed at Manchester were also present.

WAREHOUSE, BRISTOL.

STREET ARCHITECTURE.

This warehouse is built upon the site of one of the Bristol dwelling-houses of the last century, destroyed by fire in 1856. During the removal of the old materials there were discovered one or two fragments of wrought stone (mouldings, &c.), thoroughly Early English in character. The proximity of the Castle, and the frontage to Mareschall-street (now corrupted into Merchant-street), might have contributed to have rendered this locality popular, if not fashionable. Now, although the street, *per se*, is still a good one, most of the buildings are of the lowest, dirtiest, and worst description.

"*Sic transit gloria*" of Mareschall-street. The illustration (taken from a photograph), shows how easily Gothic architecture may be applied to structure of this class. The walls are built in coursed rubble work, with Pennant jambs, piers, bands, &c. and Bath stone arches, cills, and strings. The building is divided into three stories, running the entire depth of the premises (70 feet), and communicating, upon the ground-floor, with a glass-roofed hauling way, and platform of nearly equal extent. The contract was taken by Mr. Bryant, at 400*l.* the old materials being used wherever practicable. Mr. E. W. Godwin is the architect.

THE NEW BAZAAR—OXFORD-STREET.

A structure of some pretension architecturally, and which has considerable merit in the design and decoration of the interior, has been completed on a site in Oxford-street, near the Circus, and will be shortly opened as a bazaar, under the name —"The London Crystal Palace." Mr. Owen Jones is the architect. The work combines the character, externally and structurally, of the Crystal Palace style of architecture, so to call it, with, internally, features in the lighting, and in the ornament and coloured enrichments, modified from those of the works to which Mr. Owen Jones has given so much of his attention. The "iron-and-glass" manner of building, in the present case, has been wrought up to an expression considerably nearer to that of true and good architecture than what is found in the building at Sydenham; though, neither as regards good proportion and general architectonic character, nor structurally and as to domestic wants, does it yet offer those universal advantages which were at one time claimed for it. The method of lighting, however, which Mr. Owen Jones has, for the first time in one of his more important works, introduced, is deserving of particular notice in these days, when top-lighting—perhaps from the increased occupation of internal courts with buildings—has become so general. The sanitary advantages of the tendency towards such occupation of ground are questionable; but the attendant opportunities in regard to architectural effect are great. Yet it is only very lately that the arrangement of a ceiling with beams and coffers—as the *lacunaria* of the ancient temple—and ornamentally-glazed, has been adapted with any degree of skill. It had often occurred to us that the Saracenic and Moorish method of lighting, by star-like openings in a vault, might be worked on with striking results. The lighting of that part of the "Alhambra Court" at Sydenham, which reproduces very nearly the Hall of the Abencerrages of the *Casa Real*, does not quite exemplify what is meant—though the kaleidescope effect of light and colour is very beautiful. Examples of the arrangement will be recollected by most of our readers. The vault, in these cases, is pierced with openings at considerable distances apart; and they are but small externally, though expanding towards the ceiling, or the intrados of the vault. A subdued light was diffused in these apartments, most of them being baths. A somewhat analogous method of lighting was that wherein use was made, for window openings, of perforated stonework, or of tracery, sometimes of plaster. The openings, or tracery lights, were often glazed with stained glass; and windows of that description are still found at Constantinople. Our readers will recollect the drawings, and a specimen of such work reproduced, which were contributed by Mr. Burges to the Architectural Exhibition. The greater number of these works of Eastern execution, or Byzantine origin—many of them, like the works of Indian manufacture, intricate patterns, are unglazed, as probably were, in all cases, the window openings of early date, as at St. Marc's Cathedral, Venice, and at Ravenna and some places where the Saracenic admixture with Byzantine architecture is found. The windows proper, however, in later works, are usually glazed with coloured glass. Some excellent specimens of perforated stonework were amongst the contributions to the Exhibition of 1851.

The decorative systems in combination—that of the ceiling-lighting through star-shaped openings, and that of the tracery or interlacing—may be said to be used in the building at present under notice. The architect has formed the ceiling of the bazaar as a hemispherical vault, which is covered with a network of ribs arranged as triangles filled in with star-shaped panels, or lights, though subordinately to main ribs corresponding to the principals and purlins. It has been, of course, necessary to design the ceiling for distinct effects to be produced by external daylight and internal artificial light. In the former case the painted enrichment and gold are scarcely perceived, whilst the white and stained glass tell; and in the latter case the glass is darkened in appearance, and the network, colour, and gold, are intended to be prominent. It will be understood, then, that in addition to that which, structurally, the decorative intention in this new work have called forth, originality and peculiar skill have been required in the internal ornamentation.

The plan of the bazaar approaches the form of the letter L; one entrance, not now completed, being from Oxford-street, whilst the main front is in John-street. The site may be known to some of our readers as having at one time been under

consideration for a proposed building for the Architectural Exhibition. The short division of the L in the plan, which is next to Oxford-street, has a much greater breadth than the long arm has, except close to the John-street front, as some adjoining property breaks in awkwardly. This, however, has not been allowed to interfere with the normal idea, which is that of a central vault carried on two tiers of columns, with side-galleries on the first tier, to which there is a coved ceiling. Where the adjoining premises occur, the gallery is necessarily omitted; and the columns, decorated in polychromy, appear merely in face of a sage-green paper-covered wall. In the other part or arm of the plan, there is sufficient width to allow of a quadrangular space, roofed over with angle ribs, and ceiled on the same principle as the hemispherical vault; and this has its own features of effect; whilst the vault of the shorter arm meets that of the longer arm at about two-thirds of its length, the interlacings and perforations being modified to suit the spaces formed by the angle-ribs of that intersection. In the construction, the general framework is iron—cast-iron for the columns and girders; the ribs of the roof are of timber and wrought-iron flitches; the floors and external skylights are of wood; and the whole of the tracery, or interlaced work of mouldings and panels, which would be in stone or plaster in the Moorish or Turkish examples, as well as the ornament itself, is executed in the patent canvas material of Desachy, of Great Marlborough-street. The ornament of the conventionalized foliated character, common to the architecture of the Alhambra, and which is here sufficiently elaborate, is nearly confined to the capitals of the upper shafts. These spread out somewhat in the Byzantine manner, and considerably, for the apparent support of the ends of the girders which form the springing-line of the vault. The capitals are moulded in two halves, which are clasped together over the iron-fitter's work: the joint is scarcely discoverable, and painting can be commenced almost immediately. The same material in the hemispherical ceiling is fixed in pieces of 12 feet by 3 feet, comprising several compartments of pattern of the interlacing; and the star-shaped, and other perforations which there are in each triangular compartment, are formed with rebates for the glass, which is put in from the outside. The ceilings under the galleries, and the cove above, are papered—the pattern being a diaper in red, white, and blue.

The space for stalls is almost wholly on the lower floor, to which the access from the street is by a descent: the gallery, reached by stone staircases, is about 10 feet in width. The John-street front, which includes several stories, has an excellent photographic-room at the top; and refreshment-rooms—one of them private, for ladies, with lavatories and other conveniences,—are provided.

Continuing our particulars of the construction—the flange-plate of the upper tier of columns is bedded immediately upon the flange forming the top of the lower column, and the two flanges are screwed together; the girders of the gallery are laid on the flanges, and connected, end to end, through the columns, by bolts or screws, and the corresponding girders for the roof are laid in a similar manner. In the ribs of the roof, the timber portion is of 4 inches by 8 inches scantling, in segments notched together at the junctions, and the two flitches are of ½-inch wrought iron, bolted through. It is assumed, as generally now in such roofs, that there is no thrust. The purlins are in scantling, 9 inches by 3 inches. They carry the decorative ceiling, and also the fixed sashes, which form the entire roof-covering, except as to spaces over the ribs, which are covered with lead. The sashes are laid in tiers, or with a lap: but it would be necessary to take this portion of the work to pieces to clean the stained-glass within; and this, we apprehend, may be found necessary more frequently than will be convenient—especially considering that, instead of the glass being closely bedded on the bottom rail of the sash, a slight space has been necessarily left to permit the escape of condensed water. The galleries are roofed with corrugated iron. Ventilation is provided for by means of perforated zinc or other metal work (gilt internally) which covers spaces next the ribs, whence the escape is by metal pipes at the summit externally.

To describe the scheme of decorative colour, it should be stated that the plan of the iron columns is what we may best describe as cruciform with the re-entering angles filled up with segments of a circle. This plan allows of the application of two or three different colours in stripes, and their separation by fillets of white. The bands, or other broad divisions of the column, therefore, are gilded and painted light blue (or lilac) and bright red—separated by the thin strips of white. The columns of the lower tier are wholly a dark marone, or duller red,—except as to their capitals, plain in form,—which are light blue and white, with an abacus gilt—the latter being continued as a moulding all round. The gallery is enclosed by a light railing, partly gilded. The capitals, or trusses as they might be called, belonging to the columns of the upper tier, are, we think, chiefly blue and white. In the decoration of the ceiling, the effect by day-light, so far as the chromatic scheme and what makes nearly the whole of the effect, are concerned, may be said to result from the management of the glazed spaces. A number of the triangular compartments in the centre of the ceiling, in each bay, and collectively forming a diamond-shaped combination—have their star-shaped perforations glazed with ground, or white glass. The other and similar compartments of the main portion of the ceiling are glazed with yellow and blue glass. Some minor spaces, left as panels, are painted red. To prevent the reflection of colours upon goods, from the direct sun-light, Hartley's glass has been used in the external covering. At twilight, looking from below at the coloured glass, a curious alteration is noticed, the yellow changing first to a greenish hue. For the decorative effect by night, colour and gold on the traceried ribs, come into play. The effect then is chiefly due to the gold; but, as the gilding is applied mostly on narrow beads or fillets of the ribs, and without what to ourselves would have seemed the provision for contrast, the effect is rather inferior to what might have been expected from the quantity of work, chiefly gilding, which there is. The gas-lights resemble those used at the St. James's Hall, that is to say, the jets issue from star-formed branches, and one of these hangs from each of the main ribs, dividing the bays of the ceiling.

The elevation to John-street has sufficient of the outline of one of the ends of a transept of the Crystal Palace, and enough of the general character of filling-in, to bring it within that class of structure and design. But a gable-formed termination is carried above the larger semi-circular light which may be called the feature of the class of buildings, and the gable is crowned with a gilt ante-fixa and acroterial ornaments. The semicircle is filled in with tracery intersecting and mainly Gothic in character. The material of the tracery is wood—pretty nearly flush with the front, as it seems,—Building Act to the contrary notwithstanding. In the remainder of the front the materials are iron and glass—formed in the principal upper stories into ranges of segmental arches, with shafts; whilst in the ground story the windows are set back, so as to leave detached shafts—the latter bearing semicircular arches, charged with elaborate ornament and colour, and rising from capitals also highly enriched. Fret-work, or other ornament, also fills in the panels between the stories of windows.

The structure has been completed by Messrs. Kennard, Brothers, acting in the position of general contractors; and the decorative work has been done by journeymen's labour, under Mr. Jones's immediate supervision.

INSTITUTION OF ENGINEERS IN SCOTLAND.

OPENING ADDRESS.

At the opening meeting of the second session, held on the 27th inst. Dr. W. J. Macquorn Rankine, the president, delivered an address, sketching the recent progress and present state of engineering matters. In the course of it the president said,—

The use of coal instead of coke as fuel for locomotives is rapidly spreading, with most beneficial results. The advantage of coal over coke, in point of cheapness, is so well known as to need no comment; and many members of this Institution must have had occasion to observe the great superiority of coal over coke in raising and maintaining a high pressure of steam; the effect of which is, that the same engine which, with coal as fuel, can be worked expansively, so as to economize the heat to the best advantage, requires, when coke is used, to be worked at full pressure; so that, even independently of the higher price of coke, the steam works less economically. * * *

The most perfect example of the prevention of smoke which I have lately seen is at some reverberatory furnaces into which blasts of air are blown by a fan, both above and below the fuel. Before this system was adopted, those furnaces produced smoke almost unequalled for thickness, blackness, and volume; and now there is no smoke whatsoever emitted at any time, and there is a great saving of fuel. The blasts are regulated at the discretion of the workmen who attend to the furnaces. By stopping the upper blast, volumes of black smoke in the old style can be reproduced at any moment; but the re-admission of the blast instantly converts that smoke into flame.

In the administration of the law for the prevention of smoke, the thing chiefly to be avoided is, the giving a preference to some particular method of prevention, and the enforcing it in all cases, without considering whether it is suitable to each particular case. Considering how many different contrivances are available, every furnace-owner ought to be left as far as possible to adopt that contrivance which appears to his own judgment to be the most convenient and suitable. It is not a grievance, that the owners of boiler furnaces, and furnaces of a few other classes, should be prevented from making smoke, if there are parties to whom smoke is a nuisance; but it is a grievance that any particular method of preventing smoke should be forced upon them.

The same principle is true with respect to the application of the law to all branches of practical mechanics. Let every engineer, every manufacturer, every shipowner, every person who makes or uses anything which can cause nuisance, damage, or danger to others, be fully responsible for all the nuisance, damage, and danger that his structures or machines may occasion; but let the means of preventing those evils be left to his own judgment. Any other course lessens his feeling of responsibility, and tends not only to retard the progress of improvement, but to produce the very evils which it is designed to prevent; and such is the effect of all regulation by authority of such matters as the thickness of a boiler, the thickness of the plates of a ship, or the closeness of her ribs. * * * * * *

A contribution of almost unequalled importance has lately been made to our knowledge of the laws of the strength of boilers, by Mr. Fairbairn's experiments on the resistance of thin tubes to collapse. In my introductory address last year, I referred to a preliminary report on these experiments, which had been read to the British Association in Dublin. Since the close of our last session, the detailed account of these experiments has been laid before the Royal Society, and will probably be published in the "Philosophical Transactions" for 1858; and an abstract of their results has been read to the British Association. Mr. Fairbairn finds, that the intensity of the pressure required to make a flue or other thin tube collapse is directly as the square of the thickness nearly, inversely as the diameter, and inversely as the length. The diminution of the strength of a flue, as the length increases, is a law never before suspected. For computing the pressure, in pounds on the square inch, which a wrought-iron flue can sustain, the following rule is sufficiently near the truth for practical purposes:—*Multiply the constant factor*, 806,000, *by the square of the thickness, in inches, and divide by the product of the length, in feet, and diameter, in inches.* It is of great importance to strength that the flue should be exactly cylindrical; and as a flue with lapped joints cannot be exactly cylindrical, Mr. Fairbairn recommends that flues should be made with butt-joints and covering-strips. * * * * * *

Another important experimental inquiry into the laws of the strength of materials is that of Mr. William Henry Barlow, on the resistance of beams to breaking across. I mentioned in my introductory address last year the general result of Mr. Barlow's first series of experiments; and I have now only to state that his second series of experiments on the same subject has appeared in the "Philosophical Transactions" for 1857. In the same volume, also, is contained an important series of experiments by Mr. Hodgkinson, on the strength of pillars.

Important progress has of late been made in the adoption by practical men of correct principles as to the action of the particles of a beam in resisting fracture, the knowledge of which principles had formerly been confined to a few mathematicians. They relate chiefly to the action of the *shearing force*, and its combination with that of the *bending force*, which latter was at one time the only circumstance considered. One of their results is that the *neutral axis* of a beam, as it is called, is not, as it used to be described, a place of no strain whatsoever on the particles; but is truly a place where, although the strain in a horizontal direction due to the bending force is nothing, the strain due to the shearing force is a maximum, and

consists in a tension in one diagonal direction, and a compression in another, each making an angle of forty-five degrees with the horizon. Mr. Stephenson lately, while referring to this fact, proposed a very ingenious method of verifying it experimentally. On the side of an unloaded beam a series of small circles are to be drawn. When the beam is loaded, each of these circles will become an ellipse, whose dimensions are to be measured. It will be found that near the upper side of the beam each ellipse has its longer axis vertical, and its shorter axis horizontal; that near the lower side each ellipse has its shorter axis vertical, and its longer axis horizontal; that at the neutral axis each ellipse has its longer and shorter axes sloping at angles of forty-five degrees; and that ellipses in intermediate positions have intermediate figures and obliquities.

The construction of iron bridges of great size still continues to be one of the leading features of the engineering of the time. The forms of bridge which have been practically tested may be divided into five classes,—the arch, the suspension-bridge, the tubular girder, the lattice girder, and the bowstring girder,—of each of which I shall cite one recent example;—the arch, exemplified by Mr. Page's Westminster-bridge, which has the broadest roadway in the world; the suspension-bridge, by the bridge of the same engineer at Chelsea; the tubular girder, by Mr. Stephenson's enormous viaduct across the St. Lawrence, at Montreal; the lattice girder, exemplified, in the form invented by Captain Warren, by the Crumlin viaduct, which, constructed by Messrs. Liddell and Gordon, as engineers, and Mr. Kennard, as contractor, crosses the vale of the Taff at the height of 220 feet; and the bowstring girder, exemplified, in a novel and singular form, and on a gigantic scale, by Mr. Brunel's viaduct at Saltash, in which the string of the bow, which, in the original form of the bowstring girder, was a straight tie, is made to take a curved, or rather a polygonal form, and to act as a suspension chain. The great works which I have cited as recent examples of viaducts are interesting in other respects besides the superstructure. The piers of the Crumlin viaduct, which I understand to have been designed by Mr. Kennard, consist of a skeleton framework of iron, being excellently adapted to the purpose of attaining an immense height at a moderate expense. The bases of the piers of the new Westminster-bridge may be briefly described as consisting mainly of cast-iron boxes filled with concrete. Those of the Victoria-bridge, at Montreal, are of massive granite masonry, remarkable for the cost which has been incurred in order to enable the piers to withstand the floating ice of the river. The central pier of the Saltash viaduct is founded by a process originally practised at the new Rochester-bridge, but never before carried out on so great a scale, consisting in the sinking of vertical iron cylinders filled with compressed air, inside of which the excavators and masons work.

The completion of these great structures will furnish important data for settling the question as to the most economic mode of crossing wide valleys at great heights, and of founding heavy structures under difficulties of various kinds.

SYMBOLICAL SIGNIFICATION OF THE PALM-TREE, THE PHŒNIX, AND THE PINE CONE.

The correspondence of religious symbols used by some of the ancient nations with those found on Christian monuments, and still more or less employed, would induce one to believe as much in the original unity of religious doctrine as in the unity of the human species. In illustration of this we may take the palm-tree (*Phœnix dactylifera*), the sacred tree, the tree of life, among the Egyptians, the Assyrians, and the Jews. That the Egyptians, at a comparatively early period of their monumental history, represented the date-palm in this sense, we have a most interesting illustration on a stele in the Berlin Museum, which Dr. Lepsius found in the village of Abousir, near the great Pyramid. From the stem of the tree proceed two arms, one administering, to a figure kneeling below, the fruit or bread of life; the other pouring from a vase the water of life, which the recipient guides to his mouth. This stele is at least anterior to the fifteenth century before Christ. On a more recent stele, and in fact, as far as I am aware, with this exception only, the tree of life, among the Egyptians, is figured by the *Ficus sycamorus*, the sycamore-tree of the Bible; or, occasionally, by the persica, among the boughs of which the goddess Nutpe appears with her hieroglyphical name, "Abyss of Heaven," administering to immortal souls the food and drink of the celestial regions.

The date-palm was largely introduced by the Jews in the decorations of Solomon's Temple, being represented on the walls along with the cherubim, and also on the furniture and vessels of the temple (1 Kings, vi. 29, 31, 35; vii. 36). In the "Song of Solomon," which theologians regard as significant of the love of the Church for Christ, the spouse of the Church, we read, "I said I will go up to the palm-tree, I will take hold of the boughs thereof" (Solomon's Song, vii. 8). In the last chapter of the "Apocalypse" there is a distinct reference to the palm-tree as the tree of life in the heavenly Jerusalem. For the tree here described (Revelations, xxii. 1, 2), "which bare twelve manner of fruits, and yielded her fruit every month, and the leaves of the tree were for the healing of the nations," is evidently intended for the palm-tree, popularly believed to put forth a shoot every month, and the leaves of which were used for writing on. Accordingly, we find the palm-tree figuring in Christian mosaics as the tree of life in Paradise. A very good illustration of this is found in the Apsis of S. Giovanni Laterano. We have here an enclosure, the entrance to which is guarded by an angel; and within appears the palm-tree, on which is perched the phœnix, with a glory of rays, God the Father standing on one side of the tree, God the Son on the other. I have already alluded to the phœnix here placed as the symbol of the resuscitated and glorified body. It is alleged (I cannot speak personally as to the fact), that when the palm-tree has decayed, the Arabs cut it down to the roots, and burn it on the spot, and the ashes being covered with a layer of earth, a new shoot springs up, which in the course of a few years becomes a strong tree. It would seem that we have here the origin of the fabled phœnix rising renewed from the flames that consumed it, as the bird and the tree bear the same name. This is probably the reason why, in Christian symbolism, the phœnix with a glory of rays was employed to signify the glorified body in the resurrection. I have never seen the peacock employed in this way, perched on the tree of life, nor with a glory of rays. But the palm-tree was also represented as synonymous with the cross, and with Christ. This may be seen in the illuminated frontispiece to an Evangelium, probably of the ninth century, in the library of the British Museum. Here the symbols of the four Evangelists, placed over corresponding columns of lessons from their gospels, are shown looking up to a palm-tree that rises from the centre, and on the top of which is placed a cross, having suspended from its arms the symbolical letters, Alpha and Omega.

In Christian iconography the cross is considered as identical with Christ. So we have here the source of the Divine life symbolized by the palm-tree as among the ancient Egyptians before their system had degenerated into idolatry.

These remarks were necessary in order to illustrate the meaning of the pine cone in the hands of the Assyrian winged figures, or personified symbolical principles of Deity, placed on each side of the Assyrian sacred tree on our Nineveh monuments.

It will be observed that the tree here represented is a conventional form of the palm-tree, and it is surrounded by an enclosure of palmettes, or abbreviated forms of this tree, as in a garden of Paradise. The pine cones are held towards the tree as having a significant connection with it. I consider them to symbolize the Divine principle of eternal life, and that they are held towards the tree of life to indicate the source from whence that life is derived. Why the pine cone was selected for this purpose may have been owing to its highly inflammable nature, and the ideas prevalent as to the nature of the Divine principle itself. It is curious that the pine cone should come to have been used as synonymous with the cross, or the tree of life, or Christ, as shown in a compartment of the ivory tabernacle in the sacristy at Sens.

Many of your readers have seen the famous pina that once crowned the mausoleum of Adrian, and of which Dante makes mention in the "Divina Commedia:"—

"Come la pina di San Pietro a Roma:"

it now stands on a sort of terrace in the Vatican garden, between two bronze peacocks. Why the peacocks were placed there, or whence they came, I could not satisfactorily learn, but the circumstance is interesting, as illustrating the same mystery, and in the same way as the tabernacle at Sens.

The Evangelist St John has sometimes been represented with wings and an eagle's head, not unlike the Assyrian figures on the Nineveh marbles, —*apropos* of which might be quoted the curious fragment of the Zoroastrian oracles preserved by Eusebius (Præp. Evang. l. 1, c. x): "God is he that has the head of a hawk. He is the first indestructible, eternal, unbegotten," &c. &c. According to Dr. Layard, *Nisroch*, in whose temple Sennacherib was slain by his sons, was neither more nor less than such a symbolical personified Deity, as *Nisr*, we are told, signifies an eagle in all the Semitic languages, and the graver's tool might easily confound the head of an eagle with that of a hawk.

Pine cones, it may be remarked, are also held in the hands of the Assyrian winged figures in situations corresponding to those in which the symbolical divinities of the Egyptian theology hold the *crux-ansata*, the well-known symbol of eternal life, with which the pine cone is shown to be synonymous.

Thus we find the same fundamental truth lying at the root of all religious teaching, as indicated by the remains of art, and its records, among Egyptians, Assyrians, Jews, and Christians.

The same thing, though in a diluted form, occurs among the Etruscans and Greeks.

On a silver-gilt tazza in the Etruscan museum of the Vatican, taken from the tomb of a priest at Cerere, the palm-tree occurs along with the winged Assyrian cherubim: thus we have a paraphrase of the doctrine symbolically expressed on the walls of Solomon's temple. The palmette is also a very common sacred symbol on Etruscan funeral vases. The asperge used for sprinkling the holy water in consecration is represented of this form, and is often found held in the hands of the reclining figures on Etruscan sarcophagi, as we may see by those in the Uffizi at Florence.

In the sacred architecture of the Greeks, the palmette occurs as the crowning ornament of their most beautiful temples, and we find it also sculptured on the acroteria of the pediments.

Whoever is curious in the matter of palmettes, and has the time and opportunity to gratify his taste that way, may in the cloister of the Lateran trace every gradation of the form, from its stately origin to its most humble representative,—from the majestic palm to the modest *fleur-de-lis*, which, notwithstanding its name, would seem to be a lineal descendant of the palm family.

H. C. Barlow.

A NEW FIELD FOR ART.

In old times the profession of the sign-maker was by no means a contemptible one: rich carving and emblazoning and cunning devices were exhibited by the workers in this department of old English skill; and in times more modern, Hogarth, Morland, and others of note have, like Dick Tinto of famous memory, condescended to paint street-signs.

It is true that the out-air position of street-signs renders such works perishable; but when we consider the enormous sums spent on the decoration of places of business, and the necessity of attraction in the metropolis, it does not seem that it would be a very great piece of extravagance to expend two or three hundred pounds on the fine yet vigorous execution of a street-sign; and it should be remembered that in the present day the means of protection of such works is to be obtained at no great expense by means of plate-glass covering of any required size.

It is true that even in hostelries the good old-fashioned practice of affixing the painted emblems of the house is not so common as formerly. This, however, is easily to be accounted for by the great decline of this kind of art, which has made it a sort of disgrace for the Hogarths and artists of similar standing at this day to be associated with it. And so rather than put up with the miserable daubs which only could be obtained, tradesmen have preferred to describe in letters the nature of their signs. It is, however, likely that a revival may take place; and certainly a first-rate picture on some modern enriched examples of street architecture would not only be a means of gaining notice (and as a matter of course custom), but also of spreading amongst a large number a taste for a good style of art.

We remember the time when artists of ability could not be prevailed upon, at almost any price, to make drawings on wood. Now, however, matters are different; and so it may be with street signs, or other business illustrations; and even if the tradesmen do not restore their signs, it may be that, for the purpose of advertising, paintings and sculpture of a high class may become not only a means of enlivening the dulness of our streets, but also be a source of profit to artists of ability. We have been led to these remarks by the con-

stantly increasing use of illustrations in the advertisements introduced in several journals, at railway stations, and in the streets,—some on a very large scale: most of the railway stations now present something of the appearance of an advertising picture-gallery. The skill of the printer and lithographer has been called into use, producing works which, for brilliancy of colours, though not in artistical design, rival the illuminations of the Middle Ages. Some of these advertisements have cost in their production very large sums of money; but, generally speaking, the artistic quality of the illustrations is not of a very high order: they evidently show the want of taste and appreciation of good art amongst the chief part of the business-men who require such works. The same may be said of those in railway carriages; and it is extraordinary how little the art of contrast and giving point and concentration to the matter of chief interest has been observed. Considering the cost of these matters, even if not good, the extent of circulation, and the great importance of these advertisements being to the purpose, and attracting attention, it would be worth while to employ talent of the highest order, in the first instance, to prepare designs, which, however, should, to a certain extent, be revised by practical men; for there are many technical difficulties, in working off large numbers with rapidity, clearness, and economy, which have to be provided for.

As to the wall-advertisements, some of them, as regards size, are extraordinary productions: letters of a yard long, and printed in bright colours, attract the eye, and by a comparison dwarf those which would have been considered not long ago monster advertisements. In some of these a species of illustration of a rude and dauby description has been placed, giving the passer-by but little idea of the artistic quality of the exhibitions or publications to which they are intended to direct notice. A marked improvement has, however, taken place in this respect since the plan has been adopted of establishing permanent advertising stations in suitable and prominent situations. Before this the rivalry of bill-stickers caused even the largest and most elaborate hand-bills, if they may be so called, to be rapidly defaced: now, however, it is not unusual for one of these to brave the elements for several months: the consequence is, that more pains are taken; and we have lately seen a disposition to introduce oil-painting of a bold description for the illustration of advertisements on a large scale. The letting of blank walls for this purpose is a source of considerable profit; and it seems probable that this, in consequence of the permanency it gives, may be the means, both throughout town and country, of giving employment to a considerable number of good artists. The invention of an improved food for cattle has already placed in the leading thoroughfares bold representations of the effect of the new food on the various animals: these are, perhaps, more bold than tasteful. They, however, indicate what might be done in this respect; and no doubt the competition of trade and progress of taste will have their sure effect in this direction.

STATUES IN THE HOUSES OF PARLIAMENT.

About fifteen or sixteen years ago, various competitions were called in painting, sculpture, and decoration, for the purpose of assisting "the Royal Fine Art Commission appointed to encourage the Fine Arts in the rebuilding of the Houses of Parliament" in making such a selection of style and of artists as they deemed might best further that object. Shortly after the large competitions in cartoons, sculpture, and other works of art, which took place in consequence,—in all of which it was considered that a creditable response had been made to the national call—that is to say, about fourteen years ago, in the year 1844, a report was called for from the architect "as to the localities in the New Houses of Parliament adapted for the reception of works of sculpture."

His reply, having specified places for 220 statues of what may be called the architectonic or secondary class, went on to point out other situations which might be advantageously occupied by statues of the highest "historic character." For these he indicated—

In Westminster Hall	58	situations.
In St. Stephen's Hall	16	"
In the Central Hall	24	"
In the Corridors.....	87	"
Total.....	185	situations;

thus affording places in all for not much less than 200 statues of "distinguished personages" connected with the history and honourable reputation of our country.

As an immediate *sequitur* to this, in the following year, that is, in 1845, a sub-committee of the Royal Commission was appointed to select from our annals "a list of the names of various distinguished personages to whose memory statues might be with propriety erected in the New Houses. The result of the labours of this sub-committee was a list, which was duly submitted to the Commission on March 6, 1845, and which was revised and confirmed in the same month. This carefully prepared list, in which the names of nearly all our great worthies appear, being rather a long one to give *in extenso*, I will, to economize your space, merely briefly state that it contained the names of—

10 royal personages,
35 statesmen,
10 divines,
13 military and naval heroes,
6 men great in the law,
14 philosophers and men of science,
18 eminent literary characters,
2 historians,
5 artists,

and a few others not so easy to class, making up in all the number of subjects for individual statues of the highest historic class, in marble or bronze, to 121, towards filling the larger number of situations suggested by the architect. This afforded a prospect considered, I believe, a bright one at the time for British sculpture.

These reports and suggestions were, however, as quoted above, made and confirmed in the year 1845. We are now not very far from the end of the year 1858. Thus, in the interim, thirteen years have passed away; and, out of the 121 subjects originally set forth by the royal commission towards occupying the situations submitted by the architect, but sixteen have been executed. This number has been completed within the present year, and may be seen in St. Stephen's Hall.

Decoration, as we know, has been largely used in the Houses of Parliament: continuous commissions have also issued, to a certain degree, to several painters; but the rumour has not gone abroad of any more sculpture being in the horizon. The brushes of some of our best painters are moving on the walls, but the ring of the chisel is not heard.

The above details as to the number, situations, and subjects for the statues are to be found in the printed reports of the Fine Art Commission, which also contain further suggestions of places for statues connected with this national structure not alluded to in the above remarks. Epsilon.

PRESERVATION OF STONE.

Some time since Mr. B. H. Paul wrote us on the method of preserving stone from decay, for which he has obtained a patent. The object of the treatment he adopts is to render the surface of the stone impervious, by depositing in the pores a substance that is not affected by mechanical or chemical atmospheric influences, and to effect this by the use of one liquid applicable alike to stone before or after the erection of a building, and without danger of in any way deteriorating the appearance of the stone, as regards colour, or otherwise.

The material employed for this purpose is the aluminate of potash, a liquid which is readily absorbed, and in part enters into chemical combination with the mass of most stones, whether calcareous or silicious, producing in the one case aluminate of lime or magnesia, a substance analogous to spinelle, one of the least alterable minerals known; and in the other case, silicate of alumina, corresponding to felspar. There is also a further effect produced by the action of the atmosphere on the aluminate absorbed into the stone. This consists in the decomposition of the aluminate of potash by the carbonic acid of the air, and the deposition, in the pores of the stone, of alumina in a highly compact state, analogous to corundum, emery, &c in being insoluble in acids,—even concentrated sulphuric acid. As a consequence of this character of the alumina deposited, he considers that the stone will be protected from the influence of sulphuric acid and sulphates which in towns and at the sea coast are amongst the chief agents of destruction. The deposition of alumina in the pores of the stone would also, he maintains, "prevent the decay caused by the carbonic acid of the atmosphere, because alumina does not combine with carbonic acid, and is not dissolved by carbonated water, as is the case with carbonate of lime, and even silicate of lime. Moreover, the gradual deposition of material in the pores of stone, and the simultaneous combination of it, to some extent, with the mass of the stone, are, I believe, more calculated to produce that compactness of texture at the surface of the stone, which would permanently prevent penetration of water or moisture, than the instantaneous production of a precipitate. For in the former case, the deposited material, besides being chemically unaffected by atmospheric agencies, is also more coherent, more approaching to the crystalline state, and thus while filling up the pores, renders the mass of the stone more dense, impervious, and homogeneous."

We confine ourselves to a communication of the facts, at present.

WINTER EXHIBITION.

The little Winter Exhibition of cabinet pictures and sketches in the French Gallery, Pall-mall, has been opened for the sixth time, and consists of 131 works. It is not very striking, looked at as a whole, but includes some very interesting items. For example, Mr. Frith sends both the first study for the Derby Day and the finished sketch for the picture. The first study consisted simply of the central incident of what the picture afterwards became, namely, the tumbler and his child, with the open barouche and its occupants on the right. It is a charming little picture, much to be coveted. Mr. F. Goodall, in "A Scene at Wexham Rectory," shows Mdlle. Rosa Bonheur sketching cattle; and the bulls represented being those painted by the lady, and something of her style being adopted, the picture tells its own story strikingly. Stanfield, Cattermole, Linnell, and E. M. Ward contribute: the latter sends "A Scene from Peveril of the Peak," wherein the head of Major Bridgenorth is painted with great vigour of effect. Mr. O'Neill has two soundly painted studies growing out of his successful picture of last year, "The Departure" and "Home Again." Mr. Noel Paton has a striking picture in the melancholy vein in which his genius has run lately, called "The Dead Lady;" Mr. Dobson a charming "Dresden Flower Girl;" and Mr. Eyre Crowe a group of "Steele and his Children," in Ward's early manner of more than ordinary merit. Mr. Holman Hunt, Mr. Calderon ("The Gaoler's Daughter, in small), Mr. Gale, and Mr. Cave Thomas are also amongst the noticeable contributors.

PREVENTABLE DISEASE.

SCARLET FEVER.

It is so very important that no false expectations of the benefits derivable from sanitary exertions should be raised in the public mind, that I venture to trouble you with a few remarks upon the article headed "Preventable Disease," in the last number of the *Builder*. There are, indeed, certain diseases which are not only believed to be preventable, but of which it may be asserted that we can point with considerable confidence to the local conditions by which they are produced. But this does not apply to scarlet fever, the particular disease referred to by your contributor as a preventable disease. No one, so far as I know, has ever been able to trace scarlet fever to any other origin than intercourse, either direct or indirect, with persons already sick with that disease. Its existence in a particular place is, therefore, dependent upon the presence or absence of the poison given off from the bodies of the sick; and this may either be received by inhaling the atmosphere of the sick room, or be conveyed to a distance by means of clothing or of other infected articles. The extension or diffusion of the disease will depend mainly upon the number of persons who, while unprotected by a previous attack, may be brought into relation with the contagion. Perhaps also it may be influenced by some unknown conditions under which either the poison becomes more intense, or persons become more apt to receive it. Thus, although scarlet fever is rarely or never absent from great towns, there are times when (under these unknown influences) the slumbering embers are fanned into greater activity, and the disease assumes, as at present, an epidemic character.

And not only does the *extension* of scarlet fever vary much at different periods, but its *intensity* likewise varies greatly in different epidemics. Whilst, in a particular epidemic, one person in every four or five that are attacked may die, scarcely one case in twenty or thirty will prove fatal on another occasion. Season has evidently much influence either on the extension or the intensity of scarlet fever. The average weekly number of deaths produced by it in London being much larger during September, October, and November than at any other season of the year.

It is also much more prevalent in particular years, as in 1848 and in the present year, during both of which a much larger than the average number of deaths have been produced by it.

Speaking from a professional experience of more than twenty years, I am led to the conclusion that the liability to suffer severely from scarlet fever is due rather to personal, or, perhaps, I should say, to family predisposition, than to external circumstances. I have repeatedly observed that just as certain families are prone to gout or consumption, so are the, in other respects, healthy children of certain parents peculiarly liable to suffer severely from scarlet fever, and that deaths have occurred among the children of the same families, in different epidemics, even where their residence has in the meantime been changed.* On the other hand, every medical practitioner of wide experience will support my assertion that excellency of residence and purity of air afford no certain immunity from this disease in its most malignant form. It is, indeed, by no means certain that those local conditions which are known to produce, or to aggravate, several other diseases, have any influence over the intensity of this disease. No doubt a close, ill-ventilated, over-crowded room, is unfavourable to recovery; no doubt that in such places the emanations from the sick are likely to be more active than in places where proper ventilation dilutes them.

But apart from this indirect influence which scarlet fever does but participate with small-pox—a disease which likewise originates from contagion—and, indeed, contagion excepted, with every kind of illness, such unfavourable circumstances seem to exercise no influence over either its intensity or its course.

I am induced to offer these observations, because it is desirable that correct opinions of the nature of preventable disease should be entertained by the public. I believe that the amount of preventable mortality has not been at all over-stated, but I am likewise of opinion that its causes still demand much careful investigation, and that, with certain exceptions, such investigation must precede any further progress in the art of preventing disease. E. Headlam Greenhow, M.D.

* A similar opinion on the influence of family predisposition over the intensity of scarlet fever has been expressed by Mr. Simon, at page 183 of his "Reports relating to the Sanitary Condition of the City of London;" and more recently, at page 7 of his Introductory Report to my paper "On the different Prevalence of certain Diseases in different Districts of England and Wales."

THE WASTE OF LARGE TOWNS.

A view of one of the colossal dust-heaps which are still to be found in the suburbs of the metropolis leads one to inquire into the uses of what is ordinarily considered the waste of large towns, and one learns with some surprise the value of matters which had been thought to have none. The dust-yards, by the way, are much better managed than they were formerly. They are fewer in number, too, fortunately, and the accumulations are not allowed to remain so long unused. The refuse is sorted almost as rapidly as it is shot from the contractors' carts, and carried away in barges, or otherwise disposed of. Nevertheless, these yards should be banished from towns, and, where permitted, carefully inspected.

On arriving at the depôts, the "dust" collected from the streets and houses is sorted by bands of women, mostly Irish, under the superintendence of foremen. Every morsel of rag, iron, tin, glass, and other matters, which will produce money, is picked out systematically. Vegetable and other substances, suitable for manure, are gathered. The screenings of cinders and fragments of coal, wood, &c. are carefully put aside for brick burning; broken crockery, oyster-shells, and other hard substances for road-making: in fact, every portion is put to use; and when thus divided, a still more minute division takes place. The scrap iron is separated from the cast metal: zinc and pieces of brass, lead, and copper, which might not at first seem worthy of notice, become valuable when collected. Old tin-pots and kettles are not without use: some are gathered up at a small cost by workmen, whose employment it is to restore such as are not too far gone. The iron handles of water-pails, the handles of shovels, &c. are taken off when the remaining parts are unfit for use, and joined to other vessels. We must not forget the bones which unthrifty housewives often slip into the dust-bin; and when all these things are considered, it is easy to believe the story that a London contractor offered the intended husband of his daughter the choice of a dust-heap in Maiden-lane, or 10,000*l.* as a marriage portion. The bride-groom chose the money, but the dust-heap turned out to be of greater value by several thousand pounds.

In other ways, the waste of London is equally cared for: the rag-shops, temptingly placed in even the poorest neighbourhoods, are the means of collecting waste-paper, fat for the candle-maker, and other commodities, which produce an immense yearly sum.* In several parts of London there are wholesale dealers who do business to a great extent with the small shopkeepers. In some of these establishments we are told that 200 and 300 women and upwards are employed in picking the rags, and packing them for the use of hospitals, lint-making, paper-making, and other purposes.

The dealers in hare and rabbit skins actively pursue their work; nor are the skins of cats and dogs overlooked; and so carefully is everything now put to use, that it is seldom that any of their dead bodies are long left in the streets. Other wanderers daily travel many miles of the London streets for the purpose of collecting materials for the tanners of Bermondsey: and so what one man throws away helps to keep another.

In other ways the requirements of such a great and varied community lead to systematic arrangements, and business is regularly carried on in a way which is not generally noticed. For instance, but for management, the heads, hearts, and coarser joints of oxen, sheep, and other animals, would be waste in the fashionable neighbourhoods of London; but merchants prevent this by dealing in these commodities, and supplying the markets at the Brill in Somers-town, Leather-lane, &c. from other districts. The unused joints of cook-shops, taverns, and similar places, are also gathered up for the supply of poorer neighbourhoods; though at many respectable dining-rooms it is a practice each evening for the proprietors to dispose of the remains at a cheap rate to deserving families in their neighbourhood. At Lambeth Palace every scrap is cared for, and made into soup, and distributed gratuitously to the poor who have good character; and it would be well if this excellent plan were more imitated by the gentry who are resident in London; for it is to be feared that in many instances that which would make an excellent meal for a poor family is carried away in the tub of the pig-feeder, who, in his way, assists in transmuting a portion of the waste of London into valuable commodities. By well-planned collections of "the crumbs" which fall from the rich man's table, a great boon might be conferred on certain of the poor, particularly in winter and other hard times. Those who have not thought much on this subject would be surprised at what is considered to be a luxury in the back streets and lanes of Whitechapel, and other poor neighbourhoods.

* Some of the rag-shops, in consequence of the bones collected, are in a very unsanitary condition, and do much harm in more ways than one.

IMPROVEMENT OF DUBLIN.

Apropos to our recent and frequent notices of building and other works in the Irish metropolis, we may mention that perhaps one of the most important objects attained towards public convenience is the substitution of a new and commodious bridge for the clumsy and antiquarian structure, two centuries old, which spanned the Liffey, and was familiarly known as "Bloody bridge." This has been rendered doubly desirable, as greatly increased traffic is sure to follow when the projected new street from the Four Courts to the Midland Great Western Railway terminus, at the Broadstone, on one side of the river, and the Grand Parade, 100 feet in width, from Dame-street, to the Great Southern and Western Railway terminus at the other, are carried into effect. The first portion of the former project is being actually executed by the Board of Public Works, in the erection of an additional wing to the Four Courts, and the consequent blocking up of Morgan-place; and the work, which is of costly and substantial character, is far advanced towards completion by Mr. Meade, builder, and will cost, we believe, over 12,000*l.* The requisite demolition of houses for the carrying out of both these projects will rid the city of dilapidated structures and "rookeries" of a very un-architectural character, and give some breathing space to the denizens of those over-populated localities. We question if it would not be worth the while of owners of property in these neighbourhoods to set about the work themselves in right earnest, and not depend too much on others. The latter project has actually received the assent of the Irish Government, and Mr. Louch's plan been approved of; but the supplying of the funds remains still an open question. Returning to the new bridge, however, the river at that point, namely, between Silver-street and Watling-street, on either side, being upwards of 100 feet in width, will be spanned by one cast-iron arch, 95 feet in clear of abutments, which will be constructed of seven ribs, with five castings in each, and have a rise of about 9 feet. The roadway and pathways will be 33 feet in width. Mr. George Halpin (engineer to the Ballast Board) is engineer in chief, and Mr. Killew the contractor. We may take this opportunity of referring to the new timber wharfs now in progress at North-wall Quay, from plans furnished by the same gentleman, and which will doubtless prove a great additional accommodation; as also the splendid new graving-dock recently completed by Mr. Dargan, near the point familiarly known as "Halpin's Pool," and perhaps the most important work of its kind in Ireland. We are told that the site for another graving-dock near the same place is decided on, and we feel pleasure in chronicling works which so much display progress. The Board of Public Works—though generally very tardy—are at length aroused to the desirability of removing the present swivel-dock bridges which at certain periods of the day, when the vessels are leaving with the tide, are a perfect nuisance, and at all times both narrow and inconvenient. Several months since we drew attention to the proposed "Goldsmith testimonial;" but we have reason to fear that, like the intended improvement to the College premises, whereat it was to be erected, it has, for the present at least, merged into obscurity.

St. Saviour's Church, Dominick-street (Mr. McCarthy, architect); the Mater Misericordiæ hospital, in Eccles-street (Mr. John Bourke, architect); the new railway terminus in Harcourt-street (Mr. Wilkinson, architect), are approaching completion. We hear that the Kildare-street Club are in treaty respecting a block of houses from Kildare-street to Leinster-street, for the erection of a new club-house of costly character.

The extensive establishment of Messrs. Pim, Brothers, in George's-street, is being newly fronted and otherwise improved, and several works of similar character are being carried out in other portions of the city.

BURNING OF THE AMERICAN CRYSTAL PALACE.

IRON AND FIRE.

The Crystal Palace at New York has been entirely destroyed by fire during an exhibition of the American Institute, and including a vast number of works of art. It seems that the flames spread with fearful rapidity, and darting up through the steps of the staircase above communicated to a large gas chandelier with thirty-one burners, then to a quantity of paints and oils on the second floor, leaped across to some bedding and cabinet furniture, and with astonishing celerity shot up to the dome, which speedily fell, setting fire to the pine floor of the first story. Thence the fire spread in every direction, and in a little over twenty minutes from the time when it was first discovered the entire roof of the palace fell, carrying with it most of the walls beneath.

Among the property destroyed in the palace were several fine pieces of statuary, including Kiss's equestrian statue of "The Amazon," and Marochetti's colossal statue of "Washington."

The *New York Times* says:—"The calamity has struck every one aghast, for the possibility of such an event had never been calculated upon. The peculiar character of the building, constructed as it was almost entirely of iron and glass, appeared to bid defiance to the flames; yet its destruction was more rapid than any building of wood could possibly have been. In less than fifteen minutes from the time the fire was discovered the flames spread with such fearful rapidity that the immense dome, which has so long been an object of beauty towering over the city, and a landmark from every approach, fell, and the work of destruction was complete. It was like a flash. The great fabric of glass and iron and its priceless treasures of art were suddenly wiped out of existence as though they had been mere unsubstantial vapour."

New Machine.—The *Scientific American* says,—David L. Miller has invented a machine embracing the three principles of the wedge, lever, and screw, with which a workman at the Norris Locomotive Works, Philadelphia, weighing 156 pounds, lifted with facility the enormous weight of 37,332 pounds—more than eighteen tons—merely by the application of his strength through his hands to the lever.

THE LIABILITIES OF THE METROPOLITAN BOARD OF WORKS.

Mr. Doulton, the representative for Lambeth, at the Metropolitan Board of Works, has, in an able and practical speech, brought the magnitude of the works which are necessary to be carried out in this great metropolis under the notice of the new and powerful corporation in whose care, to a great extent, the beauty, convenience, and health of this city have latterly been entrusted.

Mr. Doulton shows, that exclusive of the cost of the main drainage, which is estimated at 3,000,000*l.* he found that the Board had actually ordered works, in connection with the metropolis, to the amount of 3,752,000*l.*: in addition to this the ordinary expenses of the Board, including repairs to main sewers, debts, and establishment expenses, amounted to 100,000*l.* per annum: the Board had, besides, under consideration, works amounting to 1,037,000*l.* These, however, are not all, for in these sums account is not taken of the cost of the street from Old-street to the Eastern Counties Railway, which was estimated at 580,000*l.* The Thames embankment must also be carried out in connection with the main drainage, and the formation of the embankment on one side of the river only had been estimated at 583,700*l.* The purchase of Hampstead Heath was estimated at 200,000*l.*; throwing open Southwark-bridge, 300,000*l.*; and Waterloo-bridge, 600,000*l.* "These," said Mr. Doulton, "simply stood still, because no man at the Board was bold enough to ask the Board to carry them out." For the sake of greater clearness, we will put these imposing figures in a tabular form: and it will then be evident that they considerably exceed even the slump sum (7,000,000*l.* and upwards) estimated by Mr. Doulton:—

Main drainage	£3,000,000
Embankment of north side of river	583,700
Works actually ordered	3,752,000
Works under consideration	1,037,000
Opening Southwark and Waterloo bridges	900,000
Street to Eastern Counties Railway	580,000
Hampstead Heath purchase	200,000
	£10,052,700

Mr. Doulton has done well to bring these figures before the public, for it is better to know at once the full extent of any liability than to have a temporary veil thrown over it. When we consider the depressed condition of Spitalfields, the enormous extent of pauperism in Whitechapel and other districts, the state of a large mass of the household property in Lambeth, the high rates of many parts of the metropolis, amounting at present to 5*s.* and upwards in the pound, we cannot avoid agreeing with Mr. Doulton that it would be difficult, if not impossible, to raise, by direct taxation, and without ill-feeling and much inconvenience and resistance, the sum required. Now, the Parliament has repudiated the supply of means for the improvement and adornment of London from the national exchequer, and it is clearly a duty, if not a matter of absolute necessity, for the metropolitan authorities to appeal to the Legislature for leave to resort to those just means which are available, as in other towns, to meet the expenses of improvements, without attempting to enforce so enormous an amount of direct taxation as could not well be borne, if realizable at all.

The national buildings—such as the Houses of Parliament, and other public edifices,—which, although the property of the nation, are still part and parcel of the metropolis, and of the value of at least five or six millions,—if rated for improvements, at the rate of 6*d.* in the pound, would themselves alone produce about 150,000*l.* a year. Again, Mr. Doulton remarks that the Government has taken for its share of the metropolitan coal duty not less than 159,000*l.*; and "would any one say," he adds, "that this sum should not come into the exchequer of the Metropolitan Board?" Moreover, 165,000*l.* per annum are derived by the Government from the taxes collected in London from omnibuses, cabs, and other vehicles which occasion a very large amount of the wear and tear of the public thoroughfares. These items, if applied to the metropolitan improvements, would produce an annual revenue of not less than 474,000*l.* independent of the general taxation. It is also remarked that a very large amount of goods-traffic connected with the railways, which block up and destroy the thoroughfares, yields no benefit to the metropolis, and might with justice be rendered a source of revenue.

Mr. Doulton expressed that regret which most informed persons at the present day must experience, that Sir Christopher Wren's plan of rebuilding after the fire was not carried out, owing to the want of a central and metropolitan authority endowed with powers similar to those of the present Board, and he also generally alluded to the sad legacy of neglect which had been left to them over the wide surface of this great city, owing to the want of any general and single system of management, and stated that the magnificent improvements which have been made in Paris, Liverpool, and some other places, had been effected by fines, market dues, &c. From 1855 to 1856 the sums obtained in this way at Liverpool alone amounted to no less than 236,377*l.* That, however, was not all: "I can scarcely believe the return which has been placed in my hands," said Mr. Doulton, and from which it appears that for the very same period, in the shape of dock and light dues, Liverpool received no less than 1,294,000*l.*: Plymouth, from similar sources, received 32,081*l.*; and the Corporation of the City of London received in metage-dues, market-tolls, tonnage, mooring-chains, and the fourpenny duty on coals, in one year, 225,000*l.*

Mr. Doulton moved the following instructions to the finance committee to ascertain and report:—

"1. The various sources of revenue available to other corporations for purposes of improvement and public works, including the municipality of Paris and other foreign bodies.

2. The amount of money granted by Government to metropolitan improvements during the present century, stating to what purpose and from what sources.

3. The amount collected annually from the metropolitan area by direct and indirect taxation.

4. Total amount raised by Government and the city from the trade of the port of London.

5. Value of imports and exports of the port of London.

6. An approximate estimate of the expenses of the Board, including main drainage, metropolitan communications, parks, Thames embankment, and other improvements.

7. A statement of sources available, in the opinion of the committee, for metropolitan revenue.

8. An estimate of their probable annual amount.

9. Amount of local taxation raised on the metropolitan area."

The motion, having been seconded by Mr. Dalton, was agreed to *nem. con.*

APPLICATION OF PHOTOGRAPHY TO ENGRAVING.

In the *Builder* for September 11th there is an interesting article on the "Application of Photography to drawing on Wood," in which occurs the following paragraph:—

"In engraving on copper or steel it is necessary to produce from a picture or drawing, placed at hand, a copy by means of lines of various form and strength, on a plain surface. The copperplate engraver has not only to prepare his own outline, but he has also to invent the manner of laying on and the quality of the lines. He has to produce his work *without even the help which would be given by a photographic image.*"

With reference to the sentence which I have put in italics, I beg to call your attention to the fact that, nearly two years ago, Dr. Cheetham, of this town [Rochdale], patented a process by which the photographic image may, with the utmost facility, be transferred to metallic plates. An ordinary collodion picture having been obtained upon glass, the film is to be removed by any approved method from the glass and transferred to a copper or other metallic plate, which has been previously subjected to a preparatory process. It is then treated with certain chemical agents, by which the metallic silver, which had been contained in the collodion film, is precipitated upon the plate, and the film removed, leaving the picture beautifully distinct in pure silver upon the copperplate,—in fact, firmly *plated* on it. The wonderful beauty of the pictures thus produced on the metallic surface has been a source of admiration to all who have seen them. All the delicacy of the photograph is preserved; indeed, it appears to come out with even greater distinctness. A great practical advantage connected with this process is, that it may be readily acquired by any person of ordinary intelligence, and it does not require him to be a photographer. The whole of the process may be performed with ease in half an hour, and the plate is then ready for the engraver's hands, having the image drawn upon it with a clearness and fidelity far surpassing the skill of the most accomplished draughtsman. Suppose, for instance, that an engraving was required of any building of elaborate architectural design, such as the Houses of Parliament. By the ordinary method a skilled draughtsman would have to be employed for days, or even weeks, to produce a drawing for the engraver's use, and it would then have to be redrawn upon the plate; and here it is at once seen that the picture ultimately engraved by this tedious process is after all only the mental realization by the engraver of the draughtsman's idea of the original. By the new process a photograph would be taken in a few seconds the exact size of the intended engraving, and in half an hour it would be transferred to the plate, and ready for the engraver;—no ideal representation, but a correct picture, with all the marvellous accuracy of perspective and minute detail which the camera can alone produce. The resulting saving of time, labour, and expense, is known only to those who have some knowledge of the practical difficulties of engraving. As it is not necessary that the metallic surface should be a flat one, the process is applicable to the transfer of designs, to convex or other surfaces, and for rollers: it may also, by a slight modification, be applied to lithography. Many other adaptations of it will suggest themselves to a practical mind; such, for instance, as by the aid of the electrotype process, any surface, metallic or otherwise, may be made use of, plate may be ornamented, or dials enriched, &c.

Having personally assisted Dr. Cheetham in the various experiments connected with this valuable discovery, I can speak of its practicability with certainty; indeed, I feel assured that it only requires to be known to parties interested in such a process, to be largely and profitably employed, for a plan which gives greater accuracy at the same time that it saves time, labour, and expense, is certain to be adopted. It is to be regretted that Dr. Cheetham's professional avocations have hitherto prevented him from bringing it so prominently before the public as it deserves; but I am sure he would be happy to forward you a specimen of the process, or to give you or any of your scientific readers any further information.

R. Harvey.

MONUMENTS AND MEMORIALS.

Monument to Caxton.—A subscription is said to be at length in progress to raise a fund to erect a statue to the memory of Caxton, the printer, near the spot where he lived. The Westminster Palace Hotel is being built on the site of Caxton's house, and it is contemplated to place the statue, by permission of the directors, in some conspicuous part of the hotel.

Temperance "Monument" at Preston.—A monument is now in progress at Mr. R. Picop's, monumental mason, in Chorley, which is intended "to commemorate the cause of teetotalism in Preston," and, when completed, strange to say, it is to be placed in the Preston Cemetery! as if the temperance cause were defunct at Preston instead of alive and flourishing. The design, which is Gothic, was furnished by Messrs. Hibbert and Rainford, architects. The monument is 7 feet 6 inches in width at the base, and will stand 5 yards high. The base has four angular piers, indented with quatrefoils, and moulded: these terminate in capitals, from behind which rises the shaft supporting canopies, and from which springs a spirelet. The cost, including palisading and fitting up, will be about 80*l.*

Monument for Berwick.—Mr. Young, of Neville-street, Newcastle, sculptor, is executing a mural monument to the memory of the late naturalist, Dr. Johnston, of Berwick-upon-Tweed. The *Gateshead Observer* says of it:—"The head of the deceased—a faithful likeness (achieved under difficulties)—is carved in white marble in high relief, with emblematical plants on either side—poppy, foxglove, and corn)—and, above, a bird winging its flight onward and upward (the spirit flying away, to be at rest). The monument is to be erected, shortly, in the parish church."

Bas-Reliefs for a Mausoleum, near Edinburgh.—There are two works of art now in progress at Rome, says the *Illustrated News*, which deserve attention. They are bas-reliefs by Mr. Gatley, and are being executed for a mausoleum intended to be erected to the memory of Mr. William Henry Millar, lately residing near Edinburgh, a gentleman distinguished by his refined taste and private virtues. The mausoleum will be raised in the grounds about two miles from Edinburgh and one from Portobello. The artist was not limited in the choice of his subject, as it was not desired to be of a monumental character. The mausoleum is to be 35 feet high, and the two bas-reliefs—one on each side—are to be of Carrara marble, each 16 feet in height by 18 feet in length—in surface the largest blocks ever cut, and the bas-reliefs themselves the largest of modern times. One of these reliefs, the subject of which is the passage of Pharaoh through the Red Sea, is making rapid progress. Mr. Gatley has spared no pains to ascertain the costumes and customs of the period, and the countenances are of the true

Egyptian type. The average height of the figures is 5 feet: the average height of the Egyptians, as ascertained by the mummies, is 5 feet 2 inches. The subject for the second bas-relief is the Song of Miriam and Moses. It is a triumphal procession of sixteen figures, with camels and oxen bearing the spoils of the Egyptians. Miriam is attired in the dress of an Egyptian priestess. She advances in a fine attitude, playing on a timbrel, and preceded by female figures bearing olive branches. It will probably be some years before these gigantic works will reach the modern Athens. Mr. Gatley was a pupil of our own Baily.

The Watt Monument at Greenock.—A contribution towards the erection of this monument has arrived from Bombay. It is a block of stone, weighing 8 cwt. and bearing the following inscription:—"This stone, from the railway incline up the ghauts of India, is a tribute from the Bombay Mechanics' Institution to the memory of James Watt, A.D. 1857."

The Dargan Testimonial.—At a meeting of the committee of the testimonial, lately held in Dublin—Lord Talbot de Malahide presiding—preliminary arrangements were made for handing over to the Irish National Gallery Committee 5,000*l.* of the fund; but care has been taken that the principal hall in this national institution will be an appropriate "Dargan Testimonial." There will remain a surplus of about 1,000*l.* which will be disposed of so as best to fulfil the intention with which the money was subscribed.

BUILDERS' AND CONTRACTORS' ASSOCIATION IN AUSTRALIA.

An association has been formed under the title of "The Victoria Builders' and Contractors' Association," for the purpose of obtaining the recognition "of fair and reasonable customs and usages between builders and the general public." Each member is to pay on admission an entrance-fee of 1*l.* and a subscription of 1*l.* per quarter in advance. The Rules, after those forming the Society, are as follow:—

VII. That all Tenders shall be opened by the architect in the presence of parties tendering, and at a time of which due notice shall be given, by being posted in the architect's office, or inserted in the specifications of the work tendered for. That, in all future contracts, contractors tender only in the gross amount; and when it is intimated that the tender of any particular contractor is accepted, then only shall such contractor furnish a full schedule of his prices on being required so to do.

VIII. All description and definition of labour and materials, inserted in specification, to be taken and understood in the usual manner in which such terms are used and understood in the different trades referred to,—and also what obtainable materials are intended to be used, and such as are bought and sold under the terms used in the specification.

IX. That this Association require architects to state exactly in their specification what work is intended to be done, what quality, and how to be performed,—instead of the usual way of stating it, viz.:—"To do everything as the architects shall from time to time direct."

X. That no contract shall be taken unless the details shall be given to at least a 1-inch scale, showing the true intent and meaning of the same, and in such a clear manner as to prevent any misunderstanding as to the nature and extent of the details comprised in such specification.

XI. That all architects or proprietors calling for and receiving tenders for any building or contract, and not proceeding with the same within fourteen days after the tenders have been sent in, shall be required to pay to the lowest tenderer the following per centage, viz.:—Up to one thousand pounds, 1½ per cent.; from one thousand up to five thousand, 1 per cent.; from five thousand up to ten thousand, ¾ per cent.; and upwards, ½ per cent.; provided such person holding the lowest tender be a recognised builder or contractor of this Association,—and that no member of this Association shall tender for the same works again, unless the said per centage be paid.

XII. That all street levels, as well as the exact lines upon which buildings are to be erected, must be furnished by the architects when required, all building fees being paid by the proprietor.

XIII. That architects shall give written orders to builders, contractors or their agents, for any work required, in addition to or alteration from the contract; and that all extra work ordered at any time after the signing of the contract, shall be paid for whenever the said work has been completed to the satisfaction of the architect, or person in charge of the works.

XIV. That the members of this Association do not recognise the right of architects or proprietors to address themselves to, or interfere with, the workmen engaged on works under contract, the foreman excepted.

XV. That in case any architect shall give up a building in consequence of disagreement between himself and the proprietor, another architect shall be authorised by the proprietor to certify, on six days' notice of the contractor, to the completion of the works; and if such last-mentioned architect shall refuse to certify, without sufficient reasons to satisfy the committee of this Association that he is acting conscientiously in so doing, then the committee shall be empowered to employ any two architects to examine and certify, and their decision shall be binding on all parties.

XVI. That if any member of this Association, in carrying out, or having completed, any contract, shall consider himself unjustly dealt with, by the architect or proprietor of the building or other works, and shall require advice or assistance from this Association, he shall first state his grievance in writing, to the committee, who shall appoint a deputation to examine the works in dispute, with the drawings and specifications and general conditions of the said works: they shall then wait upon the architects or proprietor, and ask leave to explain and adjust the difference, if possible, or come to some amicable arrangement. That if the deputation shall fail to come to any terms with the architect or proprietor, or they shall refuse to entertain their mediation, they shall then report the same to the committee, who shall obtain a legal opinion before any further proceedings are taken in the matter. That if the legal opinion, as above named, shall be in favour of proceedings being taken, the secretary shall call a general meeting of all the members, and have the case fully explained to them: if put to the vote and carried, that it be tried in a manner determined upon, the costs shall be defrayed out of the funds of the Association.

XVII. Payments to be made to contractors every fortnight to the amount of 85 per cent. on the value of the work performed, until two-thirds of the work have been completed, after which payments to be made at the rate of 90 per cent.

XVIII. That in all cases referred to arbitration, the arbitrators shall be chosen from among architects and builders, and no solicitor or barrister shall be employed.

ECONOMY IN LONDON DRAINAGE.

Will you allow me space in your columns for a plan, in reference to the great drainage question, which, so far as I know, has never yet been proposed, but which seems to me calculated to effect a great saving in the cost of the works necessary to accomplish the object in view? I cannot think the question quite settled in its present state, while eminent engineers differ so much as to the ultimate utility of the costly scheme which has obtained the approval of the Metropolitan Board. If you think that any advantage may accrue to the public from the following suggestions, I shall feel obliged if you will insert them, with the view of eliciting an opinion from those more competent than I to judge of their practical utility and economy.

Instead of constructing vast walled-in rivers to intercept not only the sewage of the metropolis, but all the rain which falls upon that extensive surface, and carry it miles away to pour the mass of fœtid filth into the Thames, to the injury of the towns along its banks, and the waste of invaluable manure, I would keep the sewage and rainfall strictly separate throughout. Let every house be furnished with two drains;—one, the existing house-drain, to be connected merely with the roofs, yards, &c.; the other a trapped pipe, connected exclusively with the water-closets, sinks, &c. The former, which should convey little else than water, should open, as at present, into the existing sewer in every street: the latter, containing all the *sewage proper*, should open into a large iron conduit-pipe, to be laid along the floor of each sewer in its entire length, through which the liquid might flow, distinct from the rain-water outside, to the river-side. The dimensions of each tube should be calculated for the average quantity of real sewage it will have to carry, which will be found tolerably constant. To provide against occasional pressure, the main conduits should be furnished with conical plugs, or other relief-valves, at intervals.

I contend that, by this construction of, or alteration in, the present sewers, all the great objects in view might be attained, and new outfalls rendered unnecessary. The small size of the conduits would ensure a constant current in their contents, and prevent deposit. The sewage, undiluted, would be far better adapted for the application of a proper process, and might become a most valuable property: the channels, which might be required to convey so small a bulk of liquid out of town, would be comparatively inexpensive, and might run alongside the Thames on each side, without inconvenience; and the river itself would neither be robbed of its tributary rainfall, nor polluted at intervals with an ocean of filth, as cannot fail to be the case with the proposed flood works, if the water and the sewage are not kept distinct and separate.

Frederick J. Money.

COLCHESTER CASTLE THREATENED.

It seems that a great piece of barbarism is contemplated at the ancient town of Colchester—the "Camulodunum" of the Romans—the site of many most interesting Mediæval remains, and renowned for its old castle (partly composed of Roman bricks), where, during the siege, or rather after the town had surrendered into the hands of Fairfax, two of the gallant defenders, Lucas and Lisle, were barbarously shot.

It is proposed to remove the cattle-market (which is now held in the High-street) to the very spot where this act was committed, viz. the Castle Bailey. The corporation have actually passed a vote in favour of this site.

Party squabbles have been going on for years about this question, it seems; and only two or three months ago it was decided by this same corporation to remove the market to a spot which was thought by the majority at that time much more convenient than the present favourite one. What is the more extraordinary is, that the Castle Bailey has actually been tried and objected to by cattle-dealers, owing to the height of the castle walls tending to dwarf the cattle, as well as from the unshapely form of the ground.

At present a delicious green turf surrounds two sides of the castle, and open space around the other sides affords public access; but in the proposed arrangement this public access will be blocked up, and two sides of the castle become portions of the ornamental grounds of a gentleman interested in the property. Surely, when our deans and chapters, our churchwardens, and even our railway directors (in the case of Furness Abbey) are awakening to the public value of these relics of the past, and doing their best to open them up to public inspection, it is too bad to find the influential men of such a town as Colchester voting to shut themselves out from their own relics of antiquity. It is but right to say that one of the newspapers of the town is thoroughly alive to the disgrace, and protests most strenuously. We trust the protest may not be in vain; and if Colchester is not overburdened with public parks, we should recommend the suggestion to form one on this spot to the consideration of those whom it may concern.

GIVE US AIR.

The shaft of truth is sometimes made to fly farther, and hit harder, by being feathered with a little nonsense. Twang bow, then, and speed an arrow from an American sheaf:—

O sextant of the meetinouse, which sweeps
And dusts, or is supposed too! and makes fiers,
And lites the gass, and sumtimes leaves a screw loose,
in wich case it smells orful.—worse than lam-pile;
And wrings the Bel and toles it when men dyes
to the grief of survivin pardners, and sweeps pathes;
And for the servasses gits £10 per annum,
Wich them that thinks deer, let em try it;
Getin up befoar star-lite in all wethers and
Kindlin fiers when the wether is as cold
As zero, and like as not grean wood for kindlers;
I wouldn't be hired to do it for no some—
But o sextant! there are 1 kermoddity
Wich's more than gold, which doant cost nothin,
Worth more than anything exsep the Sole of Mann
I mean pewer Are, sextant, i mean pewer Are!
O it is plenty out o dores, so plenty it doant no
What on airth to dew with itself, but flys about
Scaterin leavs and bloin of men's hatts;
in short, its jest "fre as are" out dores.
But o sextant, in our church its scarce as piety,
scarce as bank bills wen agints beg for mischuns,
Wich some say is purty often (taint nothin to me,
Wat I give aint nothin to nobody) but o sextant,
u shet 500 men, wimmen and children,
Speshally the latter, up in a tite place,
And every 1 on em breethes in & out and out and in,
Say 50 times a minit, or 1 million and a half brethe an our.
Now how long will a church ful of are last at that rate,
I ask you, say 15 minits, and then wats to be did?
Why then they must brethe it all over agin.
And then agin, and so on, till each has took it down,
At least 10 times, and let it up agin, and wats more,
The same individible dont have the privelidge
of brethen his own are, and no ones else;
Each one mus take whatever comes to him.
O sextant, doant you know our lungs is bellouses,
To blo the fier of life, and keep it from
goin out; and how can bellusses blo without wind,
And aint wind *are?* i put it to your conseens.
Are is the same to us as milk to babies,
Or water is to fish, or pendlums to clox—
Or roots & airbs unto an injun Doctor,
Or little pils unto an omepath,
Or boys to guns. Are is for us to brethe,
Wat signifies who preeches if i cant breethe?
Wats Pol? Wats Pollus? to sinners who are ded?
Ded for want of breth? why sextant, when we die
Its only cos we cant brethe no more—thats all.
And now, o sextant, let me beg of you
2 let a little are into our church.
(Pewer are is sertin proper for the pews)
And do it weak days and Sundays tew—
It aint much trouble—only make a hole
And the are will cum in of itself;
(It luvs to cum in whare it can git warm;)
And o how it will rouze the people up
And sperrit up the preecher, and stop gasps,
And yawns and figgits as effectooal
As wind on the dry Boans the Profit tells of.

Steam-ships Building at New York.—Two steam-ships, one of 1,300 and the other 700 tons, are building at New York for the navigation of the Chinese waters. There is also building at New York, for the Russian Government, a steam-propeller ship of war, said to be the largest wooden ship in the world. The New York *Herald* thinks it not improbable that the interior rivers of China will soon be dotted with noble specimens of American marine architecture, which, in the shape of river steamers and fleet canal traders, will supersede the cumbrous junks of the Orientals, bringing civilization and trade facilities to their doors.

REIGATE CHURCH.

REIGATE within the last few days has been the scene of an election, when every free Briton present exercised the right of making as much noise as pleased him, and doing as much mischief as the weakness of the police gave him scope for. The town was quiet enough on the day preceding the struggle when accident led us through it, and presented a charming appearance. We have before now spoken of the host of somewhat superior dwellings which have grown up about this town of late years,—varied, picturesque, and comfort-ful. The laying out of the grounds, too, in many instances, is satisfactory, and gives evidence of the employment of skill:—

> "He gains all points who pleasingly confounds,
> Surprises, varies, and conceals the bounds."—*Pope.*

The leaves are falling: greens have turned to brown, and in some cases to a brilliant red; but the period has a beauty and a melancholy grace of its own, moving to soothing thoughts. "A moral character," says Chateaubriand, "is attached to autumnal scenes: the leaves falling like our years, the flowers fading like our hours, the clouds fleeting like our illusions, the light diminishing like our intelligence, the sun growing colder like our affections,—all bear secret relations to our destinies."

Reigate had a church in very early times. Anciently, indeed, it was called Cherchfelle, or Church-field. In 1199, it is known there was a church there, and in the following century the place was called Reygate. It had a castle, destroyed in the seventeenth century, and there are still some very remarkable caverns in the solid rock, one of them nearly 150 feet long. The present church has been called Perpendicular, but is for the most part of a previous period: some of the arches and capitals of the columns separating the nave and aisles are somewhat elegantly ornamented with leafage. The chancel is the handsomest part of the building: it has a fifteenth-century screen, and contains a number of monuments. Against the north wall of the chancel aisle there is an enormous pile of coloured marbles, in the shape of Corinthian columns and entablature, in memory of Richard Ladbroke, Esq. who died in 1730, and of kinsmen up to 1793.

The Banker-poet says,—"Tombs are but the clothes of the dead: a grave is but a plain suit; and a rich monument is one embroidered." This of Richard Ladbroke is certainly very much embroidered, but not exactly in the best taste.

At the east end of this north chapel there is a large monument with figures, much knocked about, in memory of Thomas Bludder, of Flanchford, who died in 1618. Charles Howard, the first Earl of Nottingham, was buried in this church,—that Howard who was "Generall of Queene Elizabethe's Navy Royall at sea agaynst the Spanyards' invinsable Navy in the yeare of our Lorde 1588." He died in 1624 at a ripe age.

Tombs set one thinking. Quite true it is that

> "These are the urns magnificent which hold
> Treasures of profoundest meditation."

All the doings of the Elizabethan period pass clearly through the mind, and we are taken back 200 years without an effort.

Over the vestry door at this end of the church there is a small brass plate with a Latin inscription, full of contractions, recording how that John Skynner, in 1513, as well with 10*l.* for the soul of Richard Knight, and 40*s.* for the soul of William Laker, and other sums, as with 103*s.* 4*d.* of his own, caused that vestibule (the vestry) to be built. It has been pointed to as an interesting example of the execution of a useful work instead of provision for the celebration of masses for the dead, just before the Reformation. The concluding words of the inscription will serve as an example of the extent of the contractions,—

"Q'o'm om'n a'ia'm p'piciet' De'."*

At the west end of the church, against the north wall, a small tablet attracts attention by the charge of the sculptured shield,—a man's leg, couped at the midst of the thigh, the upper part clothed. A small brass plate, below the shield, bears a Latin inscription, which may be Englished thus:—

> Behold! Beneath your feet lie together the bones of two; Anthony Gilmyn and his wife,—whom piety and good faith joined in love, and of whom Charles was the only descendant. The one died on the 23rd of August, 1575; the other on the 25th of December, 1580.

There are several other monumental memorials in the church (which we may note, by the way, is dedicated to St. Mary Magdalene), including five helmets, one of them silvered and gilt; but we cannot stop to note them:—

> —— "All that tread
> The globe are but a handful to the tribes
> That slumber in its bosom."—*Bryant.*

Over the vestry is kept a small collection of books. We are not aware if these are made of any advantage to the public. If we should judge from the refusal on the part of one of the officiating ministers here to allow us to pass the rail to examine the very handsome sedilia—a range of three,—piscina, and niches in the chancel, we should not anticipate that it was the case. The sedilia are polychromed. Considerable works appear to have been done in the church, and many of the window openings are filled with stained and painted glass. Amongst the latter are two by L. Lobin, of Tours, which are specimens of a style not now commonly practised by English glass-painters, being pictures painted on glass, rather than windows of stained glass. One of these, quite recently erected in the eastern window of the south aisle of the chancel, is inscribed to the memory of James W. Freshfield, and represents the Ascension. The figure of the Saviour is the least satisfactory part of the production, but some of the heads on the ground are exceedingly well painted: the whole is highly finished, and on a bright day not ineffective. When the light is not strong, windows of this character approximate more to the appearance of a painted blind than is desirable.

In the churchyard, amongst many other memorials, is a large monument to Francis Maseres, Esq. Cursitor Baron of the Exchequer, who died at the age of ninety-three, in 1824. It was erected by Dr. Fellowes, who affectionately ends the inscription upon it with,—

> "Vale, vir optime! Amice vale, carissime," &c.

The church is well placed, and all around smiling Nature gladdens eyes and hearts. Nature! and what is Nature? Carlyle, amplifying Goethe's definition,† answers,—"The time-vesture of God, that reveals Him to the wise, and hides Him from the foolish."

* The inscription is given in full in Brayley's "Surrey."

† "The visible garment of God."

"THE BUILDER'S" LAW NOTES.

Life Insurance.—A creditor effected an insurance in his own name on the life of his debtor, and charged him with the premiums, to which he did not object, although no express contract was made between them as to the beneficial ownership in the policy. It was held (the debtor having died leaving the debt unpaid) that the creditor was bound to pay the surplus of the moneys received upon the policy, after satisfaction of what was due to him, in respect of his debt and the premiums, to the personal representative of the debtor.—*Morland* v. *Isaacs.*

Irish Court of Chancery.—Lands in England.—A decree of the Court of Chancery in Ireland does not determine the validity or invalidity of a will, so far as it relates to lands in England.—*Boyce* v. *Rossborough.*

Rent-Charge.—Distress.—A rent-charge cannot be split, so as to enable the grantee to distrain upon several portions of the lands charged; and if he once distrain, and might have taken sufficient to satisfy the whole rent-charge, but do not take sufficient, he cannot again distrain for the balance of the rent due.—*Owens* v. *Wynne.*

Liability of Owner of Dog.—A dog worried some sheep, and its owner was sued by the owner of the sheep; but it was not alleged that the dog's owner knew of its having vicious propensities. It was held, that the omission was fatal to the action.—*Fleeming* v. *Orr.*

Ancient Lights.—Certain persons having become the reversioners of premises, and being about to diminish their lessee's ancient lights, they were restrained by injunction.—*Herz* v. *Union Bank of London.*

Evidence of Boundaries—Map.—An accurate map of Suffolk was published in 1736, and a new map was published in 1766, said to be from the former, "with corrections and additions." It was held, that this latter map, not from surveys, but from the other map, was not admissible in evidence in a case of disputed boundaries.—*Hammond* v. *Bradsheet.*

ART AND THE PRINCESS ROYAL.

It will interest many of our readers to learn that the Princess Frederick William of Prussia sedulously cultivates her talents as an artist in her new home; and, more, that the Princess still seeks the assistance and remembers the attention of those who were her early instructors. Mr. Edward Corbould, from whom the Princess received her first lessons in art, has just now returned from Babelsberg, where and at Potsdam,—during the temporary cessation of his duties at the palace, at home,—he has been superintending her studies. Recollecting certain absurd but no less vexatious rumours, it is gratifying to receive from an eye-witness evidence of the more than ordinary domestic happiness enjoyed by one whom all Britain regards with affection. The Princess makes practical use of her skill in drawing in the furnishing and decoration of her residence, and is having a studio fitted up in the new palace in Berlin.

Her Royal Highness appears to be a great favourite, and many anecdotes are told to show her kindness. Shall we step out of our way to give one? At the last fair in Berlin, where everything was to be bought that pleases young and old, there was one stall which was filled with things that are comforting and useful, such as felt shoes and slippers, worsted stockings and woollen gloves. The Princess had been looking from the windows of the palace upon the various groups and knots of people in the fair, noting the harmony and contrasts of colour with an artist's eye, when her attention was called to this stall, in which sat a lone woman, to whom none went. The following day the same scene presented itself,—the solitary figure, and no customers. The Princess at last determined that there should be one customer at any rate, and accordingly intimated that her pleasure was to walk. On reaching the bottom of the stairs she told the attendants that they could remain there, whilst she advanced to the gate. Entering the stall, she asked the price of the contents, to which the woman replied that it would far exceed the purse of a young lady—it would amount to "24 thalers." The Princess had but 20 in her purse at the time, but the Prince luckily appeared in sight: four thalers were borrowed, and more old women than one made happy, for the contents of the stall were distributed as soon as bought. The story is told as characteristic of the kind heart of the English Princess.

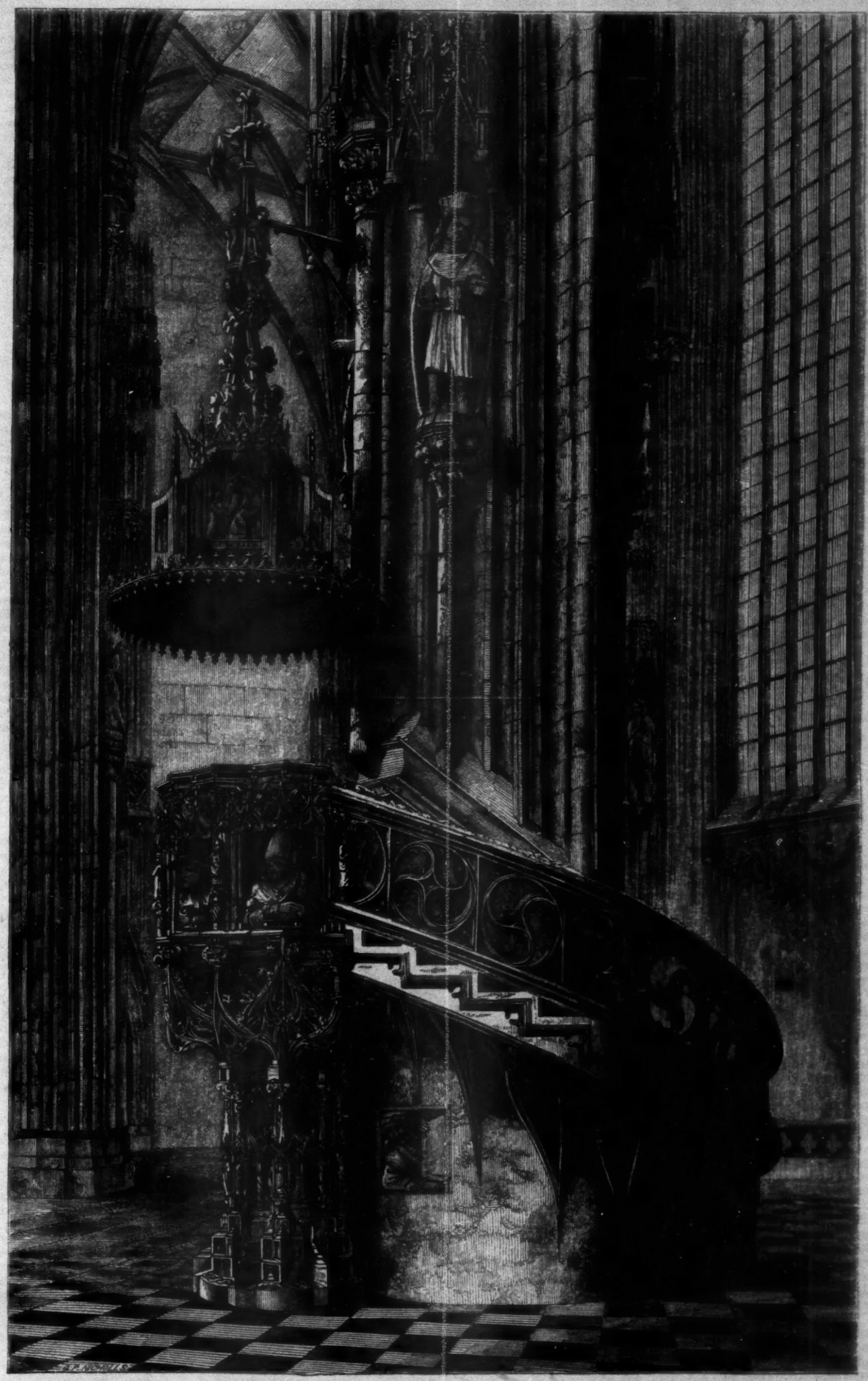
STREET ARCHITECTURE IN BELFAST.

A HOUSE-FRONT in Bridge-street, Belfast, now nearly completed, under the direction of Mr. Thos. Jackson, architect, has attracted some attention, from the circumstance of cast-iron having been used for the pilasters or story-posts, with the arches over them forming the shop-front. Metal has also been introduced for columns with arches, over the windows of the two wareroom floors, and for perforated panels of parapet. The columns stand on a solid stone sill or string. The work generally above the arches of shop-front, and forming a backing to the columns, &c. of warerooms, has been executed of patent perforated bricks, laid in Portland cement, and stuccoed with the same material.

The panels of the spandrils are sunk 2½ inches, having moulded rim round, and bold carved foliage enrichment in centre. The metal castings were prepared in Belfast. The front being comparatively light, suits the very soft and bad foundations. A horizontal tie of wrought iron is continued along the entire front, with ⊣ ends, over each story of arches, and bolted to each of the latter.

CARVED STONE PULPIT IN ST. STEPHEN'S, VIENNA.

EVERY traveller who has visited St. Stephen's in Vienna (the cathedral), must have examined with interest the stone pulpit, with its elaborate carved work, staircase, and sounding-board. In our present number we give an engraving of it. The present church was commenced in 1359, and finished in 1480. Between the aisle of the nave and the north transept is a small organ-loft, under which is carved the portrait of Anton Pilgram, sculptor, and architect of the church. The same bust appears underneath the pulpit, and is seen in our engraving.



CARVED STONE PULPIT, ST. STEPHEN'S, VIENNA.

LAMINATED RIBS.

Remembering the controversy which once before ran its length in our pages as to first users of such ribs, we hesitate as to a possible renewal of it. The subject of laminated ribs, however, is one of considerable interest, and deserves to have light thrown on it. The arrangement was adopted at a much earlier period than that mentioned by Mr. C. H. Smith in our last number. Professor Hosking, writing us on the subject, says that being, on the 26th of August, 1824, up in the great cupola of the church of Sta. Maria della Salute, on the Canal Grande, at Venice, he noted its construction as being of ribs made to the form of the profile of the cupola; each rib, in four thicknesses of board, pinned together, and all stepped into a horizontal circular curb, made up in like manner at the base, or on the drum, being the stereobasis at foot, and all pitching against another curb of the same at the head, the only bracing being the boarding for lead. That church was built entirely after the great plague in which Titian died, and was finished at about the middle of the seventeenth century. Mr. Hosking adds:—He never met with anybody who had noticed this construction, and had never heard or read of it when he saw it.

THE STAGE AND MUSIC.

Royal Princess's Theatre.—Truly, as Mr. Charles Kean says in his introduction to *King John*, Shakspeare, with the inspiration of genius, has converted the histories of our English kings into a series of dramatic poems, impressing the imagination with living pictures of the royal race, who in earlier days ruled the destinies of this island. The manager of the Princess's has sought to make these dramatic poems convey accurate pictures of the times they treat of, and of the commonalty as well as of the king, and has succeeded to an extent which has won for him a wide reputation, in addition to what he justly enjoys as an actor. *King John* has been revived with great excellence. It will not take a place as one of the remarkable series in which Mr. Kean strove to obtain as rigorous chronological accuracy in the architectural scenery as in the other adjuncts, including *Sardanapalus* (picturing Assyrian life), the *Winter's Tale* (Greek life), *Macbeth* (pre-Norman), *Richard II.* (fourteenth century), *Henry VIII.* (Tudor), and some others. Nevertheless, it exhibits some very charming scenes. The room of state, in the first act, is studied to some extent from the hall in Rochester Castle, and other known remains have been looked to. As to the costumes, the habits of many of the principal characters are copied from monumental effigies, "care having been taken that those who outlived King John, and were buried under the sovereignty of Henry III. are not clothed in emblazoned surcoats, which appear on their respective tombs, since no instance of such ornament occurs before the year 1250." The play is admirably acted. In the two principal scenes, both with *Hubert* (very well played by Mr. Ryder), Mr. Kean displays a subtle discrimination of character which needs study for its full appreciation. Mr. Walter Lacy makes an excellent *Faulconbridge*, and Mrs. Kean's *Constance* is as fine a piece of acting as was ever seen. *Macbeth* is to be revived forthwith.

The English Opera Company.—Mr. Harrison and Miss Louisa Pyne, with their company, are singing Flotow's *Martha* with great efficiency and corresponding success. We may now look for the permanent establishment of an English opera-house, where English composers and English singers may have a chance afforded them.

EDUCATION IN ART.

In Mr. Ruskin's paper on this subject, read at the recent Liverpool meeting, the writer urged the advantage of possessing the power of drawing to all classes, the difference in the course which must be pursued with working men and with those in our higher public schools, and thus proceeded:—

It is impossible to make every boy an artist or a connoisseur, but quite possible to make him understand the meaning of art in its rudiments, and to make him modest enough to forbear expressing, in after life, judgments which he has not knowledge enough to render just. There is, however, at present, this great difficulty in the way of such systematic teaching,—that the public do not believe the principles of art are determinable and in nowise matter of opinion. They do not believe that good drawing is good, and bad drawing bad, whatever any number of persons may think or declare to the contrary;—that there is a right or best way of laying colours to produce a given effect, just as there is a right or best way of dying cloth of a given colour; and that Titian and Veronese are not merely accidentally admirable, but eternally right. The public, of course, cannot be convinced of this unity and stability of principle until clear assertion of it is made to them by painters whom they respect; and the painters whom they respect are generally too modest, and sometimes too proud, to make it. I believe the chief reason for their not having yet declared at least the fundamental laws of labour as connected with art-study is a kind of feeling on their part that "*cela va sans dire.*" Every great painter knows so well the necessity of hard and systematized work, in order to attain even the lower degrees of skill, that he naturally supposes, if people use no diligence in drawing, they do not care to acquire the power of it; and that the time involved in wholesome study, being greater than the mass of the people have ever given, is also greater than they would ever be willing to give. Feeling also, as every real painter feels, that his own excellence is a gift, no less than the reward of toil,—perhaps slightly disliking to confess the labour it has cost him to perfect it, and wholly despairing of doing any good by the confession,—he contemptuously leaves the drawing-master to do the best he can in his twelve lessons, and with courteous unkindness permits the young women of England to remain under the impression that they can learn to draw with less pains than they can learn to dance. I have had practical experience enough, however, to convince me that this treatment of the amateur student is unjust. Young girls will work with steadiest perseverance when they understand the need of labour, and are convinced that drawing is a kind of language which may, for ordinary purposes, be learned as easily as French or German, but not more easily, nor on any other terms; this language, also having its grammar and its pronunciation, to be conquered or acquired only by persistence in irksome exercise,—an error in a form being as entirely and simply an error as a mistake in a tense, and an ill-drawn line as reprehensible as a vulgar accent. And I attach great importance to the sound education of our younger females in art, thinking that in England the nursery and the drawing-room are, perhaps, the most influential of academies. We address ourselves in vain to the education of the artist while the demand for his work is uncertain or unintelligent; nor can art be considered as having any serious influence on a nation while gilded papers form the principal splendour of the reception-room, and ill-wrought though costly trinkets the principal entertainment of the boudoir. It is surely, therefore, to be regretted that the art-education of our Government schools is addressed so definitely to the guidance of the artisan, and is therefore so little acknowledged hitherto by the general public, especially by its upper classes. I have not acquaintance enough with the practical working of that system to venture any expression of opinion respecting its general expediency; but it is my conviction that, so far as references are involved in it to the designing of patterns capable of being produced by machinery, such references must materially diminish its utility, considered as a general system of instruction. We are still, therefore, driven to the same point—the need of an authoritative recommendation of some method of study to the public; a method determined upon by the concurrence of some of our best painters, and avowedly sanctioned by them, so as to leave no room for hesitation in its acceptance. Nor need it be thought that, because the ultimate methods of work employed by painters vary according to the particular effects proposed by each, there would be any difficulty in obtaining their collective assent to a system of elementary precept. The facts of which it is necessary that the student should be assured in his early efforts are so simple, so few, and so well known to all able draughtsmen, that, as I have just said, it would be rather doubt of the need of stating what seemed to them self-evident, than reluctance to speak authoritatively on points capable of dispute, that would stand in their way of giving form to a code of general instruction. To take merely two instances:—It will perhaps appear hardly credible that, among amateur students, however far advanced in more showy accomplishments, there will not be found one in a hundred who can make an accurate drawing to scale. It is much if they can copy any thing with approximate fidelity, of its real size. Now, the inaccuracy of eye which prevents a student from drawing to scale is, in fact, nothing else than an entire want of appreciation of proportion, and therefore of composition. He who alters the relations of dimensions to each other in his copy shows that he does not enjoy those relations in the original; that is to say, that all appreciation of noble design (which is based on the most exquisite relations of magnitude) is impossible to him. To give him habits of mathematical accuracy in transference of the outline of complex form is, therefore, among the first, and even among the most important means of educating his taste.

CHURCH-BUILDING NEWS.

Wadhurst.—The church here has been restored and re-opened. The gallery extending along the north and west sides, access to which was obtained by a staircase on the outside of the church, has been removed, and the whole of the accommodation now afforded is on the floor of the church; but the number of seats has rather been increased than diminished, upwards of 200 additional sittings having been made available in the body of the church. The old high-back pew system has given place to stalls of stained and varnished deal. The stonework throughout the church has been restored. The east wall of the chancel had all but given way; so also had a portion of that in the north side: the bases of the capitals were likewise in disorder, and the arch of the chancel separated in many places. These faults have been repaired. The floor has been re-laid with square York slabs. Nearly all the windows have been re-glazed. The ceiling has been newly boarded with inch yellow deal, tongued together, stained, and varnished. A Spanish oak screen, polished, divides the body of the church from the belfry: this will be the vestry. Six stalls have been placed in the chancel, and some movable seats are to be added. The church has now six windows of stained glass,—five in the chancel, and the other at the west end. The two principal windows, one on each side of the chancel, were inserted some time before the restoration: others have just been put in. The whole of them are in memory of children of the vicar. One represents our Saviour with the doctors, and Joseph pursuing his occupation as a carpenter. A smaller one on the other side represents the visit of the wise men and the shepherds at the birth. The third is the offering of the infant in the Temple. The window at the west end has a design of an ornamental character, and is not historic nor figurative in representation. The restoration is from the design of Mr. Slater, of London, the builder being Mr. Smith, of Wadhurst.

Bedminster.—Arrangements are in progress for the erection and endowment of a new church, and the allotment of a district thereto, in the extensive parish of Bedminster. The site of the church has been fixed on the New-cut between Bedminster and Bath bridges. It is contemplated that the building shall contain 1,000 sittings.

Hooton.—On the 5th inst. the foundation-stone of a new church was laid by Mr. and Mrs. Richard C. Naylor, in their park at Hooton, near Chester. The church is to be in the Byzantine style of architecture, of a cross form, and will consist of nave and aisles, with central lantern, supported on stone dome at the intersection of the nave, chancel, and transepts. The chancel will have a circular east-end, supported on polished granite columns, surrounded by an ambulatory or chancel aisles. The extreme length of the building will be about 95 feet; height of nave, 45 feet; and the height of lantern about 90 feet, and will contain accommodation for about 300 worshippers. The walls will be built of the red sandstone from Eastham, with dressings and bands of the white sandstone from Stourton. The architect is Mr. James K. Colling, of London; and the builders are Messrs. Holme and Nicol, of Liverpool. The amount of the contract for the whole work is about 5,000*l.* Mr. Naylor will be at the sole expense of building and endowing the church. The silver trowel used in laying the foundation-stone was presented to Mr. and Mrs. Naylor by the architect and builders.

Chester.—An appeal is being made to the Chester public for the restoration of St. Olave's Church, in Lower Bridge-street. The scheme, according to the *Chester Chronicle*, is to repair the church in a plain and substantial manner, and afterwards to make use of it for the purposes of a Sunday-school for the united parishes of St. Michael and St. Olave.

Crewe.—St. Michael's Church, Crewe, has been consecrated. The church is at Crewe Green, amongst a rural population. It has been built from the designs of Mr. Scott, in a highly ornamented Gothic style of architecture, the materials of the fabric being red and white brick,

with the workings of the windows and the mullions in Hollington stone, decorated with carving and with shafts of polished Derbyshire marble. The church is calculated to contain 250 worshippers, in open sittings. The whole has been completed at the cost of Lord Crewe. Mr. Thomas Stringer, of Sandbach, was the contractor.

Warrington.—Winwick Church, near Warrington, has been restored. The old irregular square pews and a western gallery have been taken out, and the western arch divested of whitewash. The western window has been filled up with stained glass, in memory of the late rector, the Rev. J. J. Hornby, by the parishioners. Two heavy screens of oak and iron, which separated the two private chapels of the Leghs and the Gerards from the nave, have been removed, and new screens of wrought iron, in blue and gold, erected instead of them. Moveable benches of oak are placed in the Gerard chapel, "by courteous permission of its proprietor."

Liverpool.—The chapel at the Liverpool Royal Infirmary has been opened for Divine service. The seats are open, of convenient size, and cushioned, for the comfort of the sick and poor. At the east end is a raised dais, or platform, with the altar-table in the centre, covered with a crimson embroidered cloth, and on either side the reading desk and pulpit, which, as well as the ends of the seats, are carved. Over the altar is a painting of the Ascension.

Manchester.—Some account of the progress of the restorations and alterations at the Manchester cathedral, more particularly in the parish church portion, are given in the local *Courier*. The amount contributed up to the present time is about 11,000*l.*, but this is still considerably short of what will be needed to effect the entire improvements sketched out, anything less than which would be leaving the good work unfinished, and consequently unsatisfactory. On entering the cathedral at the west end the most important alteration is the removal of the feoffees' gallery, which blocked up the view eastwards, as well as on both sides, up to the Trafford and Ducie chapels. The choir organ will be placed in one of the arches of the choir, probably opposite the bishop's throne. It is proposed to open out the view and passage to the choir, which has hitherto been secluded. To effect this the remainder of the gallery will be taken down, and part of the old screen, thus opening the stalls of the clergy. Light will then penetrate through the tabernacle work, and the columns will be visible to the floor of the church. Looking west, the great organ gallery is next destined to be removed. The great western arch, now blocked up, will be opened out, and the large western door will again be opened. The additional length, which will be secured by the removal of the gallery and the feoffees, will be 40 feet, making a length in the nave of 84 feet. The narrow, high-backed pews are to be replaced by wide, low benches. The clerestory windows are being renewed on the north side. Two of those nearest the tower are finished. In the Ducie chapel, on the north side, improvements are contemplated. The chapel will be enlarged, the principal window being carried back some distance. The Derby chapel, on the north side of the choir, will be much altered. The chapel has been thoroughly cleansed. Adjoining is the Ely chapel, which will also be cleansed architecturally, so that every part of the stone-work will appear as when new. A warming apparatus will be put up. The carvings at the side of the Derby chapel are being repaired. Returning to the nave, the pillars and wall surface will be cleaned. The roofs also will be repaired, and a safer substitute placed in the north and south galleries for the sham plaster ceiling which fell down one Sunday during service. As to the time-worn tower, it is admitted by every one that it must be rebuilt some day. The upper part was removed some time ago, and the bells are not allowed to be swung, but are only rung by the swinging of the clappers. The architectural portion of the alterations is entrusted to Mr. J. P. Holden, architect.

Salterhebble (near Halifax).—The new church at Salterhebble, Skircoat, near Halifax, has been consecrated and opened. The church is called All Saints'. The style of architecture is Gothic, of the fourteenth century. Internally it consists of a nave, aisles, transept, and chancel. On the north side is a porch, a tower and spire rising to the height of 120 feet. The arches of the nave are high, but plain. The windows are more or less filled with tracery. The seats are of oak. The pulpit and the font are of Caen stone. The floor is inlaid with tiles. The length of the church is about 90 feet, the nave 58 feet, the breadth of which is 17 feet, and the breadth of the aisles 9 feet. The edifice will accommodate about 450 adults, and 200 children.

Todmorden.—Lydgate Church, Todmorden, has been opened. The church is built in the early decorated style of Gothic architecture, and consists of nave, 60 feet long by 33 feet wide; chancel, 25 feet long by 20 feet wide. There is a bell turret at the south-west angle of the nave, rising to a height of 80 feet. The building throughout is of the freestone of the neighbourhood. The entire cost of the structure is about 2,000*l.* and the accommodation provided is for 400 worshippers. The architect, under whose superintendence the building has been erected, was Mr. J. Green, of Todmorden.

Lytham.—A stained-glass triplet window has just been placed in the chancel of St. John's Church, Lytham, at the expense of a few friends of the church, and of the Incumbent, the Rev. W. H. Self. It contains the following subjects in medallions, viz.:—The Birth, Baptism, Transfiguration, Last Supper, Agony in the Garden, Resurrection, and Ascension. In the centre light is a full-length figure of St. John, under canopy work. In a medallion below is represented the call of St. John to follow Jesus. Between each medallion the space is filled in with Early English ornament, on a ruby ground. The artists were Messrs. R. B. Edmundson and Son, of Manchester.

Laughton-le-Morthen (Rotherham).—The chancel of the church of this place has been lately restored at the sole expense of Mr. A. B. St. Leger, of Park-hill. The east window has had its old tracery reset, and been filled in with stained glass, the work of Mr. F. Barnett, of Edinburgh. The window (which is of Perpendicular character), is composed of five lights. Each light is trefoiled. The tracery in the head is the kind usually adopted in windows of this period (A.D. 1450). The pictorial design embraces in the centre the figure of our Lord in the attitude of blessing. On either side are ranged the effigies of the four Evangelists. All the figures are placed within niches and canopies of varied colourings. The draperies of each figure, which are all diapered, are of different colours. Beneath all the figures is foliage on a geometrical pattern, whilst the tracery is enriched with the Holy Lamb, Vexillum, monograms, &c.

Pendleton.—The Bishop of Manchester has consecrated the new church dedicated to St. George, situated in Whit-lane, Charlestown, Pendleton. The edifice is built of stone, in the decorated style of Gothic architecture, and consists of a nave and chancel, with an aisle on the south side, and is covered with coupled roofs of a high pitch. The nave or highest roof is finished with a temporary wooden bell-cot. This end of the church has been partially filled up with brickwork, in the place of a tower arch, it being contemplated to erect a tower and spire at a future time. The south side of the body of the church contains four windows, with stone pillar or mullion up the centre, dividing each window into two lights or openings, and having the upper part pointed and filled in with stone tracing of a flowing but simple character. The east end of the edifice consists of two gables, the chancel one being filled by a large window divided into five openings by means of mullions, the upper part being ornamented with stone tracery work. The north side of the church has windows similar to those on the south. The nave part of this side is executed in brickwork, with stone pillars and arches over them, built in the wall, it being intended to erect an additional aisle eventually, to correspond with the opposite one. Internally, the nave is separated from the aisle by five sharp-pointed archways on short octagonal stone pillars. The roofs of the nave and aisle are formed of arched ribs over the centre of each pillar and arch; those to the chancel and porch of the ordinary timbers or rafters tied and framed together. The whole of these roofs show the construction of the woodwork, and are stained of dark colour, in imitation of old oak: externally, they are slated. The pews and fittings up throughout are of a simple kind, and are stained similarly to the roofs. The floors of the aisles, where not pewed, are paved with red and black tiles, laid diamond-wise. Accommodation has been provided for 499 adults upon the ground-floor, the greater part free. The church being built upon the side of a hill, and the foundations having been obliged to be carried to a considerable depth, have considerably added to the cost of the building. It is heated by hot air, by Messrs. Haden, of Trowbridge. Mr. E. H. Shellard is the architect; and Messrs. Statham are the contractors. The body of the church is 71 feet 6 inches long, by 40 feet 6 inches wide, and 45 feet from the floor to the ridge. The chancel is 27 feet long. The church is built of Yorkshire parpoints, with Peel stone dressings. The cost has been 3,800*l.*

Bradford.—White Abbey Chapel has been considerably enlarged, and the interior re-arranged and decorated, under the direction of Mr. E. Milnes, architect, so that now it forms one of the most spacious chapels in the town, affording accommodation for 1,200 persons. The organ-gallery has also received a new organ. Before the enlargement the chapel afforded accommodation for 780.

Wexford.—We are asked to state that the floors of the chancel and side chapels of the new Roman Catholic church here are laid with Mawe's encaustic tiles.

PROVINCIAL NEWS.

Maidstone.—The Wesleyan New Schools erected in the ground adjoining the Wesleyan Chapel, at Maidstone, have been opened. In addition to the principal school-room, which is 40 feet by 38 feet, and of high pitch, it comprises a committee-room, two class-rooms, and a residence for the chapel-keeper, or for a schoolmaster. The work has been executed by Mr. G. Chambers, sen. builder, the architect being Mr. Rolfe.

Ramsgate.—New schools have been erected and opened at St. Lawrence, Ramsgate, at a total cost of about 900*l.* The schools, which are on the Hereson-road, are intended for 120 children, and their erection was intrusted by the committee to Mr. W. E. Smith. The buildings consist of two rooms, for sixty boys and sixty girls. The rooms are convertible into one; and, by the removal of a partition, a room of 64 feet 6 inches by 23 feet width is obtained for public meetings. There is a residence for the master, and playgrounds are attached.

Dudley.—The new County Court buildings have been completed. Their site is on the north side of Priory-street. The style of the erection is Classical. The front of the building is of white Hollington stone. It is set back some distance from the street, the intervening space being inclosed by an iron railing. The ground-floor is appropriated to the business offices, the court-room being on the first-floor. This room is 57 feet long by 28 feet wide, and 26 feet high. The building has been erected, from designs by Mr. C. Reeves, under the superintendence of Mr. Collett, clerk of the works. The contractors were Messrs. Borket and Nelson, of Dudley.

Stafford.—The South Staffordshire water-works are so far completed and opened. Mr. Boys is the contractor.

Liverpool. — The proposed central post-office and the public offices for the borough, says the *Albion*, are to occupy the plot of ground on the lower side of Dale-street, running from Crosshall-street to Sir Thomas's-buildings. The post-office authorities will get the front lot, almost immediately facing the new central police-office and police-court, for the erection of the new post-office; and it is proposed to construct a new cross street, 20 yards wide, starting in North John-street, breaking through Temple-lane, and pursuing a straight course to Manchester-street, where it will debouche, although it is very probable that it may be hereafter carried farther at both of its extremities. This street will divide the post-office from the new public offices. The main internal feature of the new building will be the council-chamber — amphitheatrical in its general outline, and somewhat after the model of the Luxembourg, at Paris. The rest of the building is split off into three leading departments. Provision has also been made for committee-rooms, room for the mayor, retiring-room for the councillors, and a room for reporters. As part of the plan both Crosshall-street and Sir Thomas's-buildings are to be widened. These plans, as yet, are merely provisional, the question of erecting public offices having yet to be determined by the council. —— The foundation-stone of the new Toxteth-park workhouse has been laid. The building will be erected on ground adjoining the Toxteth-park cemetery, in Smithdown-lane. The main elevation will front the west. It will be set back from the cemetery-wall from 40 to 50 yards. The building will be three stories in height, the style, Italian, of a plain kind, except the centre façade, which will have a square tower, 86 feet high. The façade will extend right and left of the centre portion, until it reaches the projections up to the male and female imbecile wards, where two wings will project 35 feet, the whole frontage to be 411 feet in length. Extending backwards from the centre building, will be the kitchens, dining-hall, and other domestic offices, one story

only above the ground. The plan of the building is an approximation to that at Chorlton, near Manchester. The buildings will cost about 18,000*l.* exclusive of fittings, roads, the main drain, and the infirmary. The designs have been furnished by Mr. Culshaw, under whose superintendence the works are now proceeding, the contractors being Messrs. Kilpin and Montgomery, who have engaged to complete the works in ten months.

Leeds.—The operations towards the completion of the town-hall tower have been resumed. The statue of her Majesty has been removed into the great hall, and part of the steps at the front of the building have been taken up to allow of the passage of stone and materials.

Middlesborough. — The foundation-stone of a clock-tower, to be erected in the Market-place, High-street, has been laid here. The tower is being built of brick and stone to the base of the clock, which is 47 ft. 6 in. from the ground line, the outside of the tower to correspond with the present Town-hall. The top of the tower is of cast-iron, weighing nine tons. It commences at the base of the clock, and terminates in a spire. The bell is cast off the pattern of the one fixed for her Majesty at Balmoral, and weighs nearly 10 cwt. It will be fixed at the height of 60 feet. The clock will have four dials, and will be seen from the four principal streets, in the exact centre of which the tower is placed. It will be lighted in the night time with gas-lamps placed at the outside. The plans and designs are by Mr. Dunning, the borough surveyor, which obtained the premium offered some time ago by the council, and were selected from a number sent in by various architects. Messrs. Cochrane and Co. have cast the ornamental iron top: Messrs. Fidler and Law are the contractors for the brick, stone, and tower work; and the clock is supplied by Mr. Robson, of Shildon. The work is to be finished at the latter part of the present month.

Broughton.—The first stone of a new bridge over the river Irwell has been laid by Mr. J. P. Fizgerald, of Castle Irwell, for the purpose of connecting his estates in Broughton, Pendleton, and Agecroft. Mr. Fitzgerald, says the *Manchester Courier*, selected as its name "Waterford Bridge," in remembrance of his estates in the sister country, and as appropriate for a structure that was to serve the purpose of the "ford" over the "water." The bridge will be of stone and iron, and will consist of two arches of about 50 feet span each, to be crossed by flat cast-iron girders. The piers will be of stone, 15 feet wide, and the roadway 12 feet clear. It will be constructed to carry 30 tons. At present the bridge will be a private one, but eventually it will be made public. The structure will be raised at the sole cost of Mr. Fitzgerald. Messrs. Statham and Son have contracted for the bridge; Messrs. Galloway supplying the ironwork.

Shipley.—St. Paul's Church Schools, Shipley, have been opened. The schools and master's residence have been built from the designs of Mr. S. Jackson, of Bradford, architect, by Messrs. Ingram, Lapish, and John Ives, of Shipley; and have cost 2,258*l.* The school buildings comprise two school-rooms, for boys and girls, each room 60 feet long and 18 feet in breadth; two class-rooms, each 15 feet by 13 feet; two entrances, each 6 feet wide, in which the children have water and lavatories; a covered playground underneath the boys' schoolroom, and an intended infant school, not yet finished, underneath the girls' school.

Carlisle.—Preliminary steps have been taken for the establishment of a theatre in Carlisle, the requisite funds to be raised by means of shares of 1*l.* each, to the amount of 2,500*l.* or 3,000*l.* It is thought the building might be so constructed as to be available for a circus, or as a concert or assembly-room, when not in use for theatrical representations. The want of a theatre in Carlisle, according to the local *Journal*, has been long felt.

Caxton.—Six tenders for the new rural police-station were lately delivered, when the lowest, by Messrs. Gray, of Cambridge and Wrestlingworth, was accepted, at 750*l.* The work will be commenced immediately. Mr. Clark, architect.

Oxford Museum.—Sir: Who is going to pay the 5,000*l.* additional expense, caused by the defective roof? The architects, or the builders, or the University? Here is one little amount beyond the stipulated sum of 20,000*l.* Only a quarter more! I see also that the contracts for the Liverpool Library "exceed considerably the 30,000*l.*" about which so much has been written. Another agreeable termination to competitions!

W. P.

IRELAND.

The Roman Catholic Parochial Church at Malahide, county Dublin, has been recently completed internally, and some alterations from its original arrangement made. The foundation-stone was laid by the late Archbishop Murray, and the building dedicated when in a very unfinished state; but the recent works comprise the substitution of a triple lanceolated window in the northern gable for a single light, the fitting up of the chancel window with stained glass, a wrought wood panelled screen separating the sacristy from the sanctuary, and the general sitting arrangements with a view to increased accommodation. The structure is of Gothic but ornamental character, has five lancet windows in each of the flanks, and an open timber roof stained and varnished. Messrs. Michael and Scott are the contractors.

A meeting of the council of the Irish Archæological and Celtic Society was held on the 14th inst. the Marquis of Kildare in the chair. Lord Talbot de Malahide, Drs. Petrie, O'Donovan, Todd, and Reeves, and Messrs. Curry, O'Callaghan, and Gilbert (honorary secretary) were also present. It was stated that considerable progress had been made in the printing of the second part of "The Book of Hymns" of the Ancient Irish Church. The first portion of the Society's Miscellany is already printed. The publication for 1859 is intended to be "A Treatise on the Ogham or occult Forms of Writing in use among the ancient Irish," by the Rev. Charles Graves. The history of the wars of the Irish with the Danes has been undertaken at the Government expense under the editorship of Dr. Todd.

The annual general meeting of the Institution of Civil Engineers in Ireland, has been held at the Society's Rooms, Upper Sackville-street, Mr. Gibbons, V.P. in the chair. The report was read, adopted, and ordered to be circulated. The following officers for the ensuing session were then elected: — President, Mr. Mullins. Vice-Presidents.—Messrs. Gibbons, R. Mallet, and J. Bower. Council, Messrs. Lanyon, J. Godwin, J. B. Farrell, Stoney, Neville, Tarrant, Anderson, Hill, Frith, and Williamson. Secretary, Mr. Tate. Auditors, Messrs. Brazill and Russell. *Ex officio* Members of Council, Sir R. Griffith, bart. and Mr. Hemans, as past presidents.

The first Presbyterian Church Schools, at Armagh, of which the foundation-stone was laid about three months ago, are now being roofed. The ground-floor story, 13 feet 6 inches high, is executed in rubble masonry, to be finished in Portland cement, rusticated, with limestone base, strings, and dressings. From string to eave is built in red and white Belfast perforated bricks. The eave, projecting 2 feet 6 inches, is supported with coupled trusses, and, over centre of principal front, forms a pediment, with 6 inches extra projection. Within the pediment is to be set an open Bible, with text wrought on ribands round the same, in limestone. The design, by Mr. W. J. Barre, of Newry, was chosen from eleven submitted in competition. The work is being carried out by Mr. Farr, builder, Armagh.——The Precentor's House at Armagh is to be completely remodelled under the architect last named; the existing wall round it to be removed; and the enclosure thrown into the road and carriage-way at Cathedral-gate.

SCOTLAND.

Edinburgh.—The site of the immense tenement (of ten or twelve stories or so in height, if we rightly remember), at the head of the mound, which crosses Prince's-street-gardens, is about to be occupied by another large building, but of a different description. The designs have been prepared by Mr. David Cousin, the city architect, and the new tenement is to be a composition of the Scottish baronial style, embracing the features characteristic of the close of the sixteenth and beginning of the seventeenth century. It will occupy the entire area of the old buildings, being intended to extend from the gable of the remaining or uninjured portion of the old tenement on the east, to the stairs immediately adjoining the Free Church College on the west. Rising to a height of seven stories—and, in fact, at one point a few feet higher than the lofty old gable adjacent, which reaches an altitude of 104 feet—the new edifice, with its turrets, oriels, and characteristic ornamentation, will form a conspicuous mass of architecture. The principal aim, in a utilitarian sense, has been to obtain ample accommodation for the Edinburgh Savings' Bank, which will occupy the whole area or lower portion of the structure. In the ruins of the old building a picturesque effect was produced by the towering central stone staircase. In the new design the architect seems to have taken a hint from this, as he has broken up the front of his composition in a somewhat similar manner. Variety in the new front has been aimed at by introducing a bold projecting turret in the centre of the façade, rising a story above the general height. This turret forms not only the centre of the composition, but what may be termed its main feature.

Dundee.—In laying before the dock trustees the drawings of the masonry of the new dock to be constructed at Dundee harbour, the engineer, Mr. Ower, accompanied his plans by drawings for iron dock-gates, of the usual construction; but he afterwards submitted plans for lock-gates, suitable for carriages passing over as well as foot passengers, at little if any additional expense, he alleges. The dock-gate will be of malleable iron, and will float, so as to be easily removeable, for repair in the graving-dock. The cost of a separate swing-bridge for carriages, at a heavy cost, will thus be saved. The plan was approved of by the trustees, and remitted to their committee of works, with powers.

Inverness.—A new Ragged and Reformatory School has been opened at Farraline-park. It is of simple design. The architect was Mr. Ross, of Inverness. There are separate rooms for boys and girls, and dormitories for the children sleeping on the premises. The building contains a suite of rooms for the master; matron's rooms, committee-room, &c.; and hot and cold baths have been provided.

RECENT BUILDING PATENTS.*

An improved Pot for Chimneys and Ventilation. (A communication.) Dated Jan. 28, 1858.—*W. Spence.*—This consists in manufacturing chimney-pots, so that the mouth for the exit of the smoke or air may be protected, and the smoke or air within the pot receive an upward tendency from the action of the wind. This is effected by providing the pot with an upper or outer lip or cap projecting above, and at a small distance from, the inner shaft, and placing around such inner shaft a space or a series of spaces so situated in reference to an inclined surface below that the wind will be deflected upwards.

Improvements in Apparatus for Measuring Water, Gas, and other Fluids. (A communication.) Dated Jan. 29, 1858.—*R. A. Brooman.*—This consists in the employment of a pendulum in, or in connection with, apparatus for measuring fluids, so that the vibrations of the pendulum shall be regulated in extent by the rising and falling of a float, and shall be indicated upon suitable dials, the hands of which are moved by clockwork under the control of the pendulum.

Improvements in the Manufacture of Metal Pipes, and in the Apparatus employed therein. (A communication.) Dated Jan. 28, 1858.—*J. H. Johnson.*—This relates to lead and other soft metal piping, and consists in applying a coating or lining of tin during the manufacture. The pipe itself is produced by a press, which forces the metal continuously through a die in the ordinary manner; but, to effect the internal tinning of the pipe, it is proposed to employ an internal fixed mandril of a fixed construction. As the pipe exudes from the die, the melted tin passes out through perforations at the bottom of the mandril, and fills the annular space between the pipe and the middle portion of the mandril, thereby depositing a coating on the inside of the pipe as fast as it comes from the die. This coating is smoothed off by passing over the enlarged collar at the head of the mandril, which also acts as a soldering iron, compelling the tin to adhere to the interior of the pipe.

Improved Machinery or Apparatus for Breaking Stones, Minerals, and other analogous Substances. (A communication.) Dated Feb. 8, 1858.—*W. E. Newton.*—The patentee claims—1. The arrangement of machines for the breaking of stones, &c. by having a hammer fixed to a revolving shaft connected to a spring, by the action of which the hammer is lifted up immediately after having struck the stones, which are introduced in a suitable mortar, whereas the hammer is at suitable intervals thrown down on the material by a cam or tappet fixed to an arbor, receiving motion from the main arbor driven by a prime mover.

Invert Blocks used in the Construction of Sewers and Drains. Dated March 26, 1858.—*H. Doulton.*—This invention consists in applying a projecting lip at one end of each of such blocks below the upper surface, and to remove a

* Selected from the condensed lists in the *Mechanics' Magazine* and *Engineer*.

portion of the partition or partitions which divide the under hollow part of such blocks into separate hollow channels, so as to form a recess to receive the lip of the next block.

Hoods or Tops, and the Footsteps and Bearings of Ventilators. Dated March 29, 1858.—*W. Chadwick.*—This invention consists in making the ventilating vanes in diagonal and standing directions, so that the current of air or smoke in passing through the ventilator imparts a rotatory motion to the hood or top: the accumulation of soot in the ventilator and in the flue or chimney are also said to be thus prevented. The improvements in the footsteps and bearings of ventilators consist in making them of glass or other vitreous material.

ARCHITECTURAL SOCIETY OF NORTHAMPTON.

THE PRINCIPLES OF RESTORATION.

At the autumn meeting of this society, held at Northampton on the 20th, Lord Alwyne Compton in the chair, the Rev. T. James, the secretary, read his usual report or address. Speaking of the restoration at Oakham Church, he said:—

"One of the most difficult questions of arrangement, as all church-restorers know, is the position of the prayer-desk. Its correct position is, without doubt, within the chancel, but this, from the narrowness of the chancel arch, or from the projection of the easternmost responds of the nave into the body of the church, is often a most inconvenient position. This latter objection was the case at Oakham, and the difficulty has been met by what seems to me the best arrangement under such circumstances. The ritual chancel has been brought out into the nave, by retaining the level of the chancel about 6 feet westward of the chancel arch, and enclosing that projection by a low screen, within which, on each side, is a prayer-desk: thus the principle of the chancel is maintained, at the same time that the convenience of the congregation is consulted."

As to restoration generally:—

"One important point which the committee have always endeavoured to enforce upon restorers is the danger of over-restoration. A few years ago it was thought one of the highest compliments to bestow on church restoration, that you could not tell the new work from the old. In a better spirit it is now required that the distinction between the new and old should be visible at the first glance. A restorer should be content to take as his own neither more nor less than he has actually done. All splashing, therefore, of new stonework and staining of woodwork should be strictly eschewed. No workman can really imitate the gentle touches of Time; and if he succeeded, it would be only succeeding in deception. A safe rule seems to be to restore nothing which is not required for constructional safety. All ornamental work is far better left in the time-worn state in which we find it. A restored church should not look like a new one; and to all who regard the inner spirit more than the outer surface, the very mutilations which tell of bygone faith and forms are more precious than the trimmest and neatest renovation."

Mr. James described somewhat fully the works at his own church, Theddingworth.

The meeting, by a resolution, endorsed a memorial to the First Commissioner of Public Works, requesting that the new Foreign-Office it was proposed to erect should be built in the Gothic style, both as being more national and more consistent with the site.

An interesting discussion ensued on the principles involved in the address, which were warmly disputed, but led to no resolution.

VENTILATION OF PUBLIC BUILDINGS, AND RESPONSIBILITY OF ARCHITECTS.

Your last number has kindly enlightened its readers on this important subject, by the opinion of a writer in the *Leamington Advertiser*, that "it is high time to speak out against the ignorance or recklessness of architects; for we think that the law should hold a professional man responsible for the proper ventilation of public rooms, and deal with its absence as a public nuisance punishable by fine." This is a specimen of the manner in which some persons will write without thinking first. Will the writer kindly inform me what is the *proper ventilation* of a room? and who is to be the judge that a room *is* properly ventilated? Architects are not so *ignorant*, or so *reckless*, as it is too often asserted that they are. For instance, Dr. Reid, the scientific ventilator, has failed in making the 200 or 300 rooms in the Houses of Parliament satisfactory after a frightful outlay, when, if they had been left to the architect in the first instance, all would probably have been agreeable in temperature. Now the natural system is in vogue there. But let an architect suggest the use of that system, and at once he is told, by the highly competent judges on the committee, that he is not to interfere, being only an architect, and consequently not a scientific man. I see, however, that the writer above mentioned confesses that in one instance "*a scientific man* has arranged the gas-burners with ventilating-flues over them, but, for a simple reason, he has failed to remedy the evil." It would have been charitable to have given "the simple reason" which was beyond the mind of this "scientific man," and thereby caused the failure of the "proper ventilation" of the room.

Having myself read a great deal of what has been written on ventilation, I have become very lenient to any failure, believing that such failure is more often caused by the inattention of the parties connected with the mode adopted, than with the mode itself. Need I remind your readers of the quarrel between scientific men on the ventilation of some hospital in the north part of London,—one side insisting that more per cent. of patients recovered during the use of the system than did before its introduction, while the other side maintained that the system was not efficient? Was this attributable to "the ignorance or recklessness of architects?"

A Younger Member.

PUBLIC DRINKING-FOUNTAINS.

I am happy to read weekly, in your excellent journal, of the public fountain movement, and can fully appreciate your sentiments of the desirability of having erected public fountains. I believe with you that, by furthering such a scheme, the cause of temperance would be advanced. You suggest that the temperance societies ought to agitate for them, and I think there are others who would be willing to help in such an undertaking. I would suggest how the temperance societies might assist the movement. I am informed that there are from 300 to 400 teetotal societies in London and suburbs. Most teetotal societies are managed by a committee numbering twelve in general. Now, if each committee-man were to give one shilling, and each such committee-man were to obtain another shilling from a friend, and by other means that I will suggest, I think the thing could be soon done. Say 350 societies, with twelve in each committee, and twelve friends each, at one shilling each, would be 420*l*. Further aid might be rendered by a penny subscription in the workshops, the same as was adopted for the Patriotic Fund, which was so readily responded to. And might not this with propriety be called a patriotic fund? As a working man, I shall be most happy to contribute my mite, and can further state in behalf of the society (the St. James's, 58, Castle-street, Oxford-street), to which I belong, that in the event of a committee being formed to carry out the scheme, they will subscribe the twelve shillings for the committee, and twelve shillings for their friends. I think that if such committee were to arrange to have subscription boxes at the principal institutions, such as the British Museum, National Gallery, &c. there would be a general reponse made to the call.

S. C.

A "FAST" LINE TO THE PERSIAN GULF.

Sir,—A paragraph in your excellent paper concerning a railway across the Atlantic has suggested to me the propriety of communicating with you concerning a scheme which I conceived some time back, and which I believe might be accomplished without any very great difficulty. It has been said that railways are only in their infancy, which I understand to mean that the present railways are infants when compared with the railways that will be, as much as the ships in which Columbus discovered America were infants when compared with the *Leviathan* of the present day. Therefore, I am about to suggest the propriety of constructing a full-grown and vigorous railway, that would bear us with the swiftness of an arrow from the western to the eastern extremities of Europe; or, in other words, from the German Ocean to the Persian Gulf in sixteen or eighteen hours. If a line be drawn from London to Basra, at the head of the Persian Gulf, to pass through Ostend, Vienna, and Constantinople, the distance will be in round numbers 2,800 miles: it will pass through some of the finest and most populous districts of the Danube, Euphrates, Rhine, Meuse, and Scheldt. Let there be a railway similar to the Great Western of England, as straight as possible, with the double gauge. Let the engines be thrice the size of the Great Western engines, with wheels thrice the diameter, and carriages in proportion: then it is obvious that if those large wheels revolved as fast as the wheels of the engines on the Great Western do, they would convey the train thrice as far as the latter do in the same time; or, in other words, the train would be propelled 150 miles in one hour, and convey thrice the number of passengers the Great Western can in one train. Of course the wheels would run on the outside rails of the double gauge, and so render trains unable to pass each other. As each of these trains could convey between one and two thousand passengers, only one or two would be required to run each day: thus the small trains could run the short distances on the single gauge in the intervals, and the large trains could run the long distances, such as from Ostend to Vienna, or Constantinople, and from Constantinople to Basra; or even if the train did not stop till the whole distance from Ostend to Basra was accomplished, this line would pay better than any line in the world, as it would absorb all the passenger-traffic between England, Austria, Turkey, India, China, Australia, and the islands in the Pacific; and between America, Austria, Turkey, India, China, and Australia, as well as give an impetus to this traffic. As to the cost of constructing the line, it is useless for me to speculate on that point, as some sections would cost a considerable deal more than others; but as the greater part of it would pass through a comparatively flat country, the expense would not be so overwhelming as might be at first supposed, and certainly is not to be compared with the dearly-bought English railways.

T. J. Smith.

LIVERPOOL ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.

The second meeting of the members of this society was held on Wednesday night, the 20th instant. Mr. H. P. Horner, president of the society, took the chair. Mr. Stubbs acted as secretary. Mr. Picton congratulated the society on the testimony borne by the visitors recently in Liverpool to the architectural and sanitary state of the town. It was satisfactory to the society, who had something to do with the architecture of the town, to know that they were looked upon favourably by such men. He urged this in justification of his observations on a lecture recently delivered at the Collegiate Institute, by Professor Blackie, upon the subject of "Beauty and Taste." The professor had come to quite a different opinion in reference to our Liverpool architecture. The professor had passed a severe adverse criticism upon the external structure of St. George's Hall.* It was the first systematic attack he had ever heard on the external beauty of the hall; for, whatever internal faults it might have, the external elegance of the structure had never before been found fault with. He pronounced it one of the finest things in Great Britain; and he considered Professor Blackie was only ventilating his own ignorance and want of taste. Out of respect to the memory of a worthy man, he (Mr. Picton) thought it right to make these remarks on what he considered an unfair and unworthy attack.

A conversation took place in reference to a piece of boulder pavement, said to be Roman, found in an excavation near Garston. Mr. Chantrell, who had inspected the pavement, said he would give some information respecting it at the next meeting.

A paper was read, "On Bitumen and its Application to Building Purposes," by Mr. George Atkin; and some discussion followed on several points suggested by the paper.

* Professor Blackie is reported to have said, speaking of congruity as an essential of beauty, that many public buildings, by their transgressions of this rule, assisted to prove its universality. St. George's Hall, in that town, was the most incongruous building that he had ever seen. Its style united the parallelogram, or square box form, of the Greek temples, with the rounded ends of the early cathedral style, destroying the harmony of the whole. Its exterior was a confusion of pillary and plain surfaces, on which no fixed idea was expressed. If it had been surrounded with pillars it would not have had the undefined character; as, for instance, in the Parthenon, where you had pillars on every side, and could not escape from the idea thus irresistibly conveyed. The southern portico of St. George's Hall, as it appeared externally, was a complete abortion. The idea was undoubtedly borrowed from the Greek temples, in which a portico, surmounted by an entablature with inscriptions, and, it might be, a sculptured pediment, formed the chief entrance. But the south end of St. George's Hall was no entrance, for a plain stone terrace stopped the way, and if it were in its proper condition, the colonnade entrance in Lime-street was so grand and massive that it completely obscured the right entrance. It would never be perfect until the colonnade was knocked down and it had an entrance all round. The dead wall of the attic which surmounted the colonnade was also completely incongruous; in fact, an outrage upon the harmony of Greek architecture. It was like dressing a woman in flounces and furbelows below, and making her stiff and prim as a Quakeress above. The building wanted a man of taste to reduce it to one-half its size, and give it a character of compactness. It was the custom to praise it as the finest building of the kind in the country, nay, in the world; but there were many which could be named as far superior in architectural purity: as an instance, he might mention the Church of the Madeleine, at Paris.

BUILDING STONES IN LONDON.

THE HOUSES OF PARLIAMENT.

I WAS much interested to observe, on reading Mr. Papworth's communication a few weeks back, the variety of building stones, of late years, introduced in London, each appearing to possess every good quality but that of durability. The difficulty of selection still remains, and the unhappy attempts to arrest the crumbling of our new Houses of Parliament give little satisfaction. Great pains, we know, in this particular instance, were taken to find the most excellent material. Men of skill were appointed with the architect to select a proper stone, aided by those best qualified to analyse: every quarry and every building of note or antiquity was carefully examined; and in their valuable report they recommended, unhesitatingly, a stone from the neighbourhood of Bolsover Moor, in Nottinghamshire, instancing the perfect stonework of Southwell Minster as a proof of their correctness; and the ancient records of that chapter pointing to Mansfield as the source whence the stone was procured, quarries were immediately opened in that neighbourhood, that had been closed for centuries: as much stone was taken as built the river front of the new palace up to the top of the area windows, and the remaining upper part, to my wonderment, was built of stone obtained from Anston, in Yorkshire, a stone not even alluded to in that report. Concluding in my own mind the commissioners had made a mistake that the Mansfield stone was bad, I have with interest watched the result.

I find the upper stonework decaying rapidly; those beautiful carvings, by Thomas, almost obliterated; and I find the small portion in the lower part still as fresh as when put in: cemented also with lime prepared from fragments of the same, the whole is now as hard as the parent rock.

If the selection of a stone for building a national palace had been a mere matter of opinion, the subject might pass; but it was determined upon after actual experiment and careful analysis. The collection of so much practical and scientific evidence, as the report of the commissioners contained, should have made it a text-book for the profession. Will not the publication of this little fact tend to dissipate the want of reliance upon it by proving its correctness? and will it not even now enable the architect to use sculptured stones freely without the mortification of resigning his scarce completed work to the hands of a Soluble Glass Company, and their all preserving paint-brush?

VERITAS.

PROPOSED NEW ASSIZE COURTS FOR SALFORD, MANCHESTER.

SIR,—The very fair view you always take of matters relating to the competition question, and the able manner in which you have at all times held up the professors of our craft as members of a profession, which ought to be regarded by magistrates and boards of guardians as an honourable and liberal one, induce me to write you as to the proceedings at the Salford sessions, held to determine as to the site of the proposed new Assize Courts for this district, when some of the bench expressed their views relative to architectural competition—maintaining that it was unnecessary to employ the author of the selected design. I believe this mistaken idea emanates rather from want of information than from any disposition to depreciate the body of architects; but such an impression ought, if possible, to be removed.

Surely the magistrates, in inviting plans, ought unquestionably to offer the commission to the man who shall produce the best plan, unless he can be shown to be in some respect incompetent or objectionable, and no body of gentlemen ought to expect a profession of educated and cultivated men to respond to an invitation holding out a mere premium as an inducement, when the value of every design submitted can hardly be less than 100*l.* if it be at all worth the consideration of the bench.

I have been induced to draw your attention to this before the conditions of the competition are determined, as a few lines in your widely-read journal might very likely have the effect of changing the aspect of the instructions when officially published.

LOOKER-ON.

PRESENTATION TO AN ENGINEER.—Mr. John Hocking, jun. of Redruth, Cornwall, had presented to him a silver cup and salver, at Wombridge Colliery, near Wellington, in Salop, on the completion of a contract there, by Messrs. Hocking and Loam, for the erection of a pumping engine.

CLERKS OF WORKS AND ARCHITECTS.

SIR,—Much is said in your Journal about the proceedings of architects and others connected with the building craft; but there is one subject you do not appear to discuss, that is, the relation of architect and clerk of works, one to the other.

Some three or four weeks ago the Burial Board of the borough of Wakefield advertised for a "Clerk of Works" to superintend the erection of new cemetery chapels about to be built there; and it was to be expected they really did want such a man. But what was my surprise in reading the report of the proceedings to see that they and their advisers were content to accept the "spare time" of the person who professes to be clerk of the works at the parish church restorations now in progress in that town. Now (with all deference to our London architects and the church restoration committee), if I had that important work in hand (where some thousands of pounds are being spent on one of the finest parish churches in the kingdom) I should consider nothing less than the constant hourly attendance of the "clerk of works" his first and greatest duty, be his abilities ever so great. The system of one man attempting to effectually superintend the detail construction of two or more buildings a distance apart is against all sound doctrine, and it is surprising to see it supported by those from whom the country expects the greatest artistic skill and durability of construction.

Architects who have reputation to gain would do well to see to their own interests in these matters, for it is on *them alone* the blame falls if, after they have, in blind confidence, certified the works to be "completed to their satisfaction," some fault reveals itself which no superficial observer can detect at the time work is newly finished and cleaned down. The instance quoted is only one amongst others I have noticed in the West Riding of Yorkshire, and I am surprised to see it repeated. I do not know what service the second architect and committee can expect from a man who has already engaged faithfully to serve another. It is nothing more than a name, and I call upon all who would uphold the integrity of our art to aid in repressing such a system.

A YORKSHIRE SUBSCRIBER.

Correspondence.

THE OLD GRIEVANCE.

SIR,—The incompetency of those who arrogate to themselves the task of selecting for their betters what their betters are too modest or too apathetic to select for themselves, is one of the most crying grievances that our profession is subject to.

Of what earthly use are the architect's expenditure of unstinted time, ample talent, indomitable energy, and hard-earned money in the preparation of elaborate designs for a public building; fulfilling all stipulations, providing all requirements, and, in short, answering all reasonable expectations in those who issue the invitation to competition, when his just claims may in a moment be superseded through the ignorance and obstinacy of a talking member of committee, whose absurd opinions upon matters of taste are as likely to be followed and adopted by his more modest coadjutors, as his schemes of petty parochial management or measures of parish finance?

How easily are the uninitiated led by the nose in matters of art and taste, and what mischief and misery are caused to the unhappy artist by such deviation from "the path of *virtu!*"

Only fancy the mental anguish of young Inigo, who has had but three hours' sleep each night for the last six weeks, and has produced really a capital Italian design for a new vestry-hall, and who, anxious to elicit the "sense" of his judges, has placed himself within listening-distance of his pet plans, at hearing his fate sealed by the verdict of Mr. Solder, the plumber,—that "that *Greek* design should be put out of sight at once!" Or of young Wykeham, who has concentrated his hopes and ability in the production of a handsome domestic Continental Gothic design, with a well-digested plan, on receiving his *quietus* in the sentence pronounced by Mr. Last, the shoemaker,—that his design is "*too much like a church*, and that, in his opinion, such things thould be wiped out altogether"! Or, finally, imagine the general dismay of all the architectural aspirants present at seeing Mr. Prune, the grocer—the great talking man of the vestry—walk up to No. — (by Messrs. Canvas and Push), a bald and bare likeness of an old-fashioned chapel-of-ease, of the "hole-in-the-wall" style, and hearing him acquaint Mr. Diaper, the draper, that "*that* is in his opinion the design best adapted to the wants of the vestry, *having no gingerbread about it!!*" Only imagine, I say, what disgust such ill-advised opinions must occasion, not only amongst the more immediate sufferers by the injustice, but also amongst that large and enlightened portion of the public who not only show good sense in forming judgment upon works of art, but better still, in keeping such opinions to themselves, and leaving choice and selection to those who alone are competent to the task.

No! So long as committees persist in doing for themselves what should be done for them by an unbiassed professional tribunal, so long will opportunity be thrown away, art frustrated, and architectural jobbery perpetuated.

OBSERVER.

Books Received.

A Guide to the Cathedrals of England and Wales; their History, Architecture, Traditions, &c. By MACKENZIE WALCOTT, M.A. London: E. Stanford, 6, Charing-cross. 1858.

THE diffuse and wordy descriptions, and minuteness of detail, which abound in local guides and hand-books, have induced Mr. Walcott to prepare a more terse and condensed guide to all our cathedrals, in one small volume, suitable for the pocket or the hand. Those objects only which are considered to be most worthy of observation are described, and the whole appears to form a clear and faithful companion, based on trustworthy and recent authorities. It might have been a little fuller with advantage.

Our cathedrals are not valued and visited as they ought to be; and it not unfrequently happens that even lovers of art who are versant with the treasures of architecture, sculpture, and other art works abroad, are by no means familiar with the architectural treasures of their native land. It is seldom so with foreign visitors in England: they bring along with them a knowledge of what has been done in their own countries, and are hence better able to appreciate the respective merits and demerits of both, by mutual comparison.

There is no sublimer work of man upon the face of the earth than a grand cathedral. One of the very purposes of its construction was to excite a feeling of awe akin to devotion, and preparative to its deeper and more essential purposes. Our readers, like those of Mr. Walcott, will readily recall the well-known lines of Milton on surveying a cathedral; or the fine expression of Coleridge, so full of a deep, and philosophical as well as religious meaning:—"I am filled with devotion and awe: I am lost to the actualities that surround me; and my whole being swells into the infinite: earth and air—nature and art, all swell up into eternity; and the only sensible impression left me is,—I am nothing."

In Mr. Walcott's little volume, small as the scope is for any display of feeling or of admiration, and strictly and remorselessly as he keeps his mere skeleton purpose in view, it is easy to see how full he is of his subject, and how capable of enlarging on it. The nature of his moderated aspirations towards the physical glorification and perfectment of our cathedrals may be gathered from the following remarks, made while describing Rochester Cathedral:—

"While we rejoice in our simpler worship—
In beauty of holiness with ordered pomp,
Decent and unreproved—

we cannot be insensible to the loss which has accrued to the effect of the vast interiors of our cathedrals, by the removal of altars, and hangings, and lights. There is a coldness too perceptible in the grand naves, which can only be taken away by supplying the windows with stained glass, peeling off the disfigurement of whitewash, and still better, by the use of them for special services and frequent sermons. We have happily been ridden of the tinsel and glitter, and having no lamps or burning of incense, which render the churches of the Continent warm and pleasant, we must thus, by constant acts of adoration, throw life and vigour into the buildings which are our precious inheritance. The tesselated colours on the floor, the frescoes blazoned on the roof, the variegated marbles, and gilding on the wall, the chequered mosaic, the blaze of bright stained glass in the storied windows, now happily introduced gradually into our churches, will be an appreciable increase of beauty, while they will not diminish the intrinsic majesty, nor be out of harmony with the character of our daily services, to which music, in its highest form, lends grandeur and sublimity. We shall only feebly represent the divinely-ordered worship and architecture of the Tabernacle and the Temple.

When we enter the nave of Rochester, remarkable for its severe character, how the words of the poet rise upon our memory!—

'All is hush'd and still as death. 'Tis dreadful!
How reverend is the face of this tall pile,
Whose ancient pillars rear their marble heads
To bear aloft its arch'd and ponderous roof,
By its own weight made steadfast and immoveable,
Looking tranquillity! It strikes an awe
And terror on my aching sight: the tombs
And monumental caves of death look cold,
And strike a chilliness to my trembling heart.'"

Mr. Walcott gives an interesting account of the ancient coronation-chair in Westminster Abbey, which we may quote, as a specimen of his more descriptive and matter-of-fact style, rather than from any special novelty in so ancient a subject:—

"The ancient coronation chair, 6 feet 9½ inches high, 2 feet 2 inches broad, was constructed of some hard wood by Walter the painter, for Edward I. in 1300. The back is pedimented and crocketed: four lions crouch at the base: birds and shields, foliage and birds, once rendered it worthy of its destination—to hold the slab, or Jacob's Pillow. This relic, the Innisfail, or stone of fortune, is of rough reddish-grey sandstone, 26 inches long, 16 wide, 11 deep, fixed by iron bars to the chair. Simon Brek, grandson of Cecrops, says the legend, brought it from Compostella to Ireland: from Tara, in the reign of Fergus, it was removed to Scotland: on the morrow of St. Botolph, 1297, the monks sang Te Deum here, for it was then laid by Edward at the shrine of St. Edward. When King James I. took his seat on it as King of Great Britain, the good wives of Scotland declared the prophecy fulfilled, that where the chair of Scone was, there should the Scots bear rule. The second coronation chair was set up by William and Mary. We almost hear Sir Roger de Coverley seated on the witching-stone, and demanding the authority for stating that the patriarch Jacob was ever in the land of cakes, disconcerted when he had to pay his forfeit, and then smiling at the recollection of incorrigible Will Wimble coaxing a tobacco-stopper out of one of the chairs, and whispering his suspicions in the ear of the spectator; or Goldsmith's citizen moodily retiring with the growl that could he see one of the old kings seated in the chair, or Jacob's head laid on the marble, there might be something curious in the sight."

The Law relating to the Public Health and Local Government, in relation to Sanitary and other Matters. By William Cunningham Glen, of the Middle Temple, Barrister-at-Law, and of the Poor-Law Board. London: Butterworth.

Nothing is more characteristic of our social progress than the attention which has been directed of late years to sanitary enactments. It is now universally recognised, both in theory and practice, that moral and physical degradation are ever coincident and coextensive, and that the general happiness and advancement of the community are in proportion with the possession by each individual of the *mens sana in corpore sano*, which are mutually dependent one on the other. These ideas first assumed a definite and tangible form in this country in 1847, when Her Most Gracious Majesty was pleased to appoint commissioners, who, in her name, recommended certain measures of sanitary reform to the earnest attention of the Legislature. These measures became established as law by "The Public Health Act, 1848," which has since received further modifications and extension by "The Local Government Act, 1858." The importance of these Acts to the architect, the surveyor, engineer, and builder, is evident on their slightest perusal. Some knowledge on the subject is evidently necessary to the various branches of the architectural profession, and the profession will, therefore, be ready to welcome a work which will, in a convenient and accessible form, furnish a lucid and informing guide and commentary to the statutes in question. Such a desideratum is adequately met in the work under notice. Mr. Glen is already well known as the editor of many similar works. The objects of the volume cannot be better illustrated than by a brief quotation:—"The sanitary condition of the people is a subject which all must look upon as of the first importance to the well-being of the nation; for it is certain that there can be no more efficacious means of stopping the progress of epidemic, endemic, and contagious diseases, than by attending to the drainage and sanitary condition of towns. * * * This work aims to furnish to those engaged in the administration of the law, and in the advancement of sanitary reform, a practically useful treatise of the laws relating to public health and local self-government, as they exist on the statute-book, and as they are expounded by the courts of law."

The work is divided into three parts. The first part treats of the formation of the districts of the local boards of health, their constitution, election, and general powers. The second part treats of the powers of these boards as to sanitary matters and local self-government. This part is, perhaps, the most interesting to architects and surveyors. It includes chapters on "House Drainage, Sewerage, and Purification;" "Paving, Lighting, and Improving Streets;" "Highways;" "Regulation of new Buildings;" "Public Baths and Washhouses;" "Common Lodging-houses;" "Establishment of Markets;" and "Slaughter-houses." The third part treats of the powers of the boards as to rating, raising money on mortgage of the rates, purchase of lands, audits of accounts, contracts, arbitrations, legal proceedings, and bye-laws. All these subjects are treated with conciseness and perspicuity. The law affecting each of them is clearly defined and laid down, and they are illustrated by very numerous and recent decisions.

The work concludes with the statutes of 1848 and 1858, and the incorporated Acts, and is, moreover, furnished with a very complete table of the cases referred to in the body of the volume. It will serve as a rule to the builder or contractor, to keep him within the limits of the law; and, armed with this little talisman, the surveyors who may be appointed under the Act will be enabled to visit their districts thoroughly prepared to establish their directions or to support their objections. And literally having the law at "the fingers' ends," they may effectually terminate all controversy by appealing to this volume.

Our attention to this work has been in some measure bespoken, by the fact that it is inscribed by its author to "Thos. L. Donaldson, Ph. D. Dean and Professor of Architecture, University College, London, and for ten years chairman of the late Court of Sewers for the City of Westminster and part of the County of Middlesex."

The Master-builder's Plan; or, the Principles of Organic Architecture, as indicated in the Typical Forms of Animals. By George Ogilvie, M.D. Lecturer at the Aberdeen University. London: Longman and Co. 1858.

The object of this volume is to give, in a popular form, the views now generally held by philosophical naturalists in regard to a common plan of construction, traceable in each of the primary divisions of the animal kingdom. Obviously the organic creation is constructed upon a great systematic plan: it is not to be compared to an overgrown village, in which the houses—commodious and well constructed as they may be, each in itself—are scattered about without any order, every man having built as was good in his own eyes: it answers rather to our notion of a well-planned town, with the houses in regular streets, in each of which a certain uniformity prevails, while the streets themselves are arranged in that particular order which to the founder of the City seemed the most appropriate.

"In the art of architecture," remarks the author, "even as applied to individual buildings, one might trace many parallels to the typical forms existing in nature. For just as we distinguish various styles of *Masonic* architecture,—Egyptian, Greek, Gothic, &c.; so, in the construction of animals, we have what we may term different styles of *Organic* architecture—vertebrate, articulate, molluscan, and so forth. And, to continue the parallel, just as the Greek style appears in several modified forms, Doric, Ionic, Corinthian, &c.; and the Gothic in such as Norman, Pointed, and Perpendicular; so we have the Annelidan, Insect, Crustacean, and other modifications of the articulate type, and in the case of the vertebrate, those characteristic of the four classes contained in that division of the animal kingdom. In both cases, too, we find that any particular style may be employed in constructions for very different purposes, without losing its own proper character. Thus we may have churches and halls, castles and private houses, in any of these styles of architure, somewhat as we have seen the Mammalian type adapted to the flying bat, and to the fish-like whale, as well as to ordinary land animals."

"The Master-builder's Plan" is very attractively sketched in this instructive little volume, which is also enlivened by some illustrative engravings.

VARIORUM.

The new number of the *Quarterly* opens with an interesting article on Fresco Painting and Fresco Painters, *apropos* of the works of the Arundel Society, wherein the writer very justly denounces the treatment which noble works of art have received in Italy:—

"Talk of London smoke! why, Italian neglect, indifference, and ignorance have done more to deprive the world of some of its noblest and most precious monuments of art than could be accomplished by the atmospheres of ten Londons! The able and careful editors of the last edition of 'Vasari's Lives' have indicated in foot-notes the fate of the works mentioned by the biographer as existing in his day. The extent to which the work of devastation has been carried is amazing. Half, if not more than half, of the great frescoes of the fourteenth and fifteenth centuries are hopelessly and curtly described as 'sono periti,' 'appena rimane qualche vestigio,' 'dato di bianco,' 'la chiesa fu disfatta.'"

Coming down to the present time, the writer shows—what our readers have not now to learn for the first time—that the frescoes in the Houses of Parliament are, for the most part, failures:—

"A foolish notion seems to have spread amongst our painters that it is unworthy of their position to be subservient to the architect. They forget that this subservience is so far absolutely necessary when the two arts are combined that the work of the one must harmonize with that of the other. It was by constantly keeping this principle in view that the great painters of the Middle Ages—themselves frequently no less distinguished as architects—carried out their grandest and most effective conceptions. We have shown how it was their purpose to blend into one complete and harmonious whole, painting and architecture, colour and carved ornament. Nor have those artists who have hitherto been employed in the Houses of Parliament, with one exception, understood and applied the peculiar properties and quality of fresco."

The exception is Mr. Watts; and surprise is expressed that "no important part of the decoration of the New Houses of Parliament should have been confided to a man of such remarkable powers and so eminently qualified for the task." Praise is given to him for the decoration he is executing at one end of the new Hall of Lincoln's-inn:—

"The artist has selected for his subject an ideal representation of the great lawgivers of the world, collected together in one grand and solemn company, as best befitting the place, and as an introduction to a series of frescoes illustrative of the principal events in the history of English law. In his composition he has followed, to a certain extent, the mode of treatment chosen by Raphael for his 'School of Athens,' adapting its arrangement to the Gothic form of the building. Beneath these allegorical statues of Religion, Justice, and Mercy, are assembled on spacious steps those who, from the earliest times and in all lands, have given laws to mankind;—noble figures! each by individuality of expression and action and by appropriate costume typifying his race and country."

——The *Edinburgh*, in an article on "Binocular Vision," treats at some length of the stereoscope, its varieties and possible adaptations, and gives to Professor Wheatstone the honour not merely of having originated the idea on which every form of the stereoscope is based, but of having developed all its most important applications.

Miscellanea.

Preparing and Indurating Plaster.—Mr. Mariano Casentini, Westminster-bridge-road, in preparing plaster, takes of muriatic acid half a pint, American potash, 1 lb. and mixes with eleven pails of water. This solution he mixes with the plaster, and applies and moulds it in the ordinary way. Sometimes he mixes 1 lb. of glue with the plaster for every six pails of water used.

The London Mechanics' Institution.—This parent institution of its kind has, for thirty-five years, afforded instruction, in various branches of science, art, and literature, to more than 700 students annually. Much greater results might have been attained had it not been for the heavy expenses to which the institution is subject, and of which the principal is the rent of its buildings (229*l.* per annum). The lease is of long duration, and it empowers the institution to purchase the reversionary interest and extinguish the annual rent for 3,500*l.* To this end it is proposed to raise at least 1,500*l.* by public subscription, and it is believed that of the remaining sum required a sufficient amount can be borrowed on the security of the property to be purchased, and on favourable terms. The fact of the London Mechanics' Institution having been the first of the kind established in England, and the parent of more than 600 similar institutions now in existence, gives it a peculiar claim on the liberality of the friends of education. Donations are received by Messrs. Hanburys and Co. 60, Lombard-street; and Messrs. Ransom, Bouverie, and Co. 1, Pall-mall East. Lord Murray has subscribed 100*l.*; and, in all, the subscription hopefully opens with various contributions, ranging from 30*l.* down to half a guinea, the whole amounting to about 400*l.*

The New Temperance Hall at Birmingham.—This new edifice has just been opened. It consists mainly, says the *Journal*, of the large room to be used as a meeting-hall, arranged not only for transactions of the temperance society, but available for public meetings, concerts, &c. The external elevation to Temperance-street is arranged in two stories, with five openings to each story, the central one of the lower openings forming the principal entrance, and the windows on either side giving light to staircases, lobbies, &c. The upper story (divided from the lower one by a cornice) consists of five semicircular windows, with pilasters, having enriched capitals, architraves, and key-stones, with swags of fruit and flowers. The elevation is completed by an entablature enriched with dentils, and modillions, and a balustrade. This elevation is worked in white brick, Bath stone, and Portland cement, and is 50 feet high and 50 feet wide. The interior consists of a hall 70 feet long and 48 feet wide, and secondary ones at the back, with lobbies, staircases, &c. Galleries are provided on three sides, and platform on the fourth, which is available as an orchestra. In the rear of the platform are committee and retiring rooms, &c. Underneath the hall is an extensive basement suitable for a warehouse. Inside, the hall (which is left for future decoration) is divided by a series of pilasters into bays, with a covered ceiling, and is lighted by panels in the centre of the ceiling and the upper range of windows to Temple-street. The cost was 2,000*l.* Mr. H. R. Y. Thomason was architect; Mr. J. Browning, the builder; and the warming apparatus was provided by Messrs. Mitton and Co.

Royal Institute of British Architects.—The first ordinary general meeting of the session will be held on Monday evening next, the 1st of November, in the old rooms at Grosvenor-street, when the following paper will be read:—"Observations on the recent Discoveries of the Remains of the Mausoleum at Halicarnassus," by W. Tite, fellow, M.P. We may mention that the office of librarian is vacant, and that the council are seeking a competent person to fill it.

American Institute of Architects.—At a meeting on September 7, after the reading of several interesting communications from foreign members, the librarian reported the receipt of numerous works on Art, presented to the Institute. The general business of the evening being attended to, upon suggestion from the chair, a debate ensued concerning the restoration of the City Hall, wherein was shown the desirableness of making the support to domes apparent *externally*; in other words, that the substructure of domes should form a marked feature in the façade, the absence of which is too often to be regretted.

Shoreditch Survey.—Immediately before the sitting of the Court of Quarter Session at Westminster on Saturday last, the Eastern Counties Railway Company abandoned their appeal, and paid upon Mr. Paine's valuation of the terminus works and station in Shoreditch, namely, 4,250*l.* the former valuation being 2,650*l.* On the previous survey of the entire parish of Bethnal-green, the valuation of the goods station, granary, and lines of railway was also determined after appeal on Mr. Paine's valuation. Bethnal-green contains about 15,000 distinct properties; Shoreditch, nearly 19,000.

Moulded Brick.—The advertisement from the Aylesford Pottery Company, which appeared in a recent number, affords so full an answer to inquiries often made of us in respect of splay bricks, tile cores, and moulded copings of the same material, that we think it desirable to direct attention to it, and recommend its preservation. The cornice tubes and other tiles for projections will be found very useful and satisfactory.

A Material for Road-making. — A new system of road-making has just been substituted for the ordinary roadway on a part of the Place du Palais Royal, at Paris. A quantity of concrete, about 5 inches in thickness, is first spread out, and on that is applied a layer of bitumen reduced to powder, and in a boiling state. On this latter, which is also about 5 inches in thickness, a quantity of river sand is sifted, and then the surface is pressed down by a heavy cast-iron roller, weighing about 2 tons. In a few hours after the road thus made may be passed over by the heaviest waggons without the slightest impression being left by the wheels. The same system is now being applied to part of the Rue St. Honore, comprised between the Palais Royal and the Rue de Richelieu, and in the latter street as far as the end of the Théâtre Français.

The Value of the Alhambra Palace.—Recently an adjourned special sessions was held at the Vestry-room to determine the appeal of Mr. E. T. Smith against the rating of the Alhambra Palace, Leicester-square, by the parish officers of St. Martin's-in-the-Fields. Mr. Holl, as counsel for the appellant, stated that the property was rated at 1,890*l.*, and Mr. Smith appealed against this rating on the ground of its being excessive. The property was purchased for the sum of 9,000*l.* and the rent, taken at six per cent. on this amount, would be 540*l.*: the ground-rent was 910*l.*, making together 1,450*l.* as the gross annual value. From this amount is to be deducted 220*l.* paid for insurance, and 50*l.* for repairs, making the net annual value of 1,180*l.* Mr. Chinnock, auctioneer, stated in evidence that he valued the property in 1856, for the council of the Royal Panopticon Society, and estimated it to be of the value of 11,000*l.* He offered the property for sale at the Auction Mart, and Mr. Smith bought it at the reserve price of 11,000*l.*; but the property was in Chancery, and difficulties arose on the part of Mr. Smith as to the completion of the purchase; and, considering the difficulty of finding a purchaser for such a property, and the liability of the frightful ground-rent, he advised that the sum of 9,000*l.* be accepted for the property, which was accordingly done. The fixtures included in the purchase were of the value of between 4,000*l.* and 5,000*l.*, and of these about 1,000*l.*, being useless to Mr. Smith, were sold. The ground-rent was 910*l.* and the property was insured for sums amounting to 25,000*l.* at 18*s.* per 100*l.* for premium and duty. In his opinion the annual value was 1,160*l.* Mr. Dangerfield, the vestry clerk of St. Martin's, supported the rating of the parish officers. The rating was reduced to 1,550*l.*

The Cathedral at Florence.—Endeavours are being made to raise money by subscription to complete the west end of the cathedral at Florence, in accordance with the designs of Arnolfo da Lapo and Giotto.

Glasgow Architectural Society. — On Monday night, this society, which already numbers about 100 members, held their first meeting of the first session, in the Scottish Exhibition Rooms, Bath-street; Sheriff Strathern in the chair. The learned sheriff delivered an inaugural address. Mr. Thomas Gildard subsequently read a paper on "Some of the Causes which affect architectural Design."

Ventilation and Healing.—Dr. Bouisson, Professor of Clinical Surgery at Montpellier, has addressed to the Academy of Sciences a paper in which he recommends ventilation as a speedy and effectual means of healing sores and ulcers. This may serve as a further enforcement of the necessity of attention to our observations on the arrangement of hospitals.

A Well at Romford.—A well has been sunk at Romford for a brewing firm. The excavation is 80 feet deep and 50 feet over. Upwards of 100,000 bricks were used in its formation, and its cost is said considerably to exceed 500*l.* Nearly all the wells in the town are suffering from a deficient supply of water, in consequence, it is alleged, of this new brewery well.

An American Steam Excavator. — In completing the embankment on the Cleveland and Erie-road, at Girard, a steam excavator is now in operation. One locomotive and a number of cars are required to each excavator. Temporary ways are laid from the embankment to the excavators, with a siding and switch near the latter, so that the empty cars can be run up to the machine for the load, when they are turned out to the main line, and instantly another car is run up to the excavator, loaded, and sent down the line to the locomotive. The time required to run up the car, load it, and send it down the main line does not exceed twenty seconds, and it is said that four cars per minute are loaded. The depth to which the machine cuts is about 12 feet.

Lecture on Architecture at Birmingham.—Mr. J. H. Chamberlain, the recently-appointed Professor of Architecture of Queen's College, delivered the opening lecture of his course on the 21st inst., in the College theatre, in the presence of a large and influential audience. The lecturer addressed himself mainly to the subject of the office and duties of architecture, and the necessity of their being more generally understood. Tracing the progress of building from the earliest times, he showed how, at last, by cultivating science and the beautiful, it was elevated to the dignity of architecture. He defined the duty of the architect to be, to design not merely beautiful, but commodious and healthy habitations, and to provide for their proper combination into streets and cities. We had now no really national architecture. Architecture did not take its place as the most prominent of the arts; but this state of things he hoped would not be allowed to continue. Mr. Chamberlain enforced on the historical student and the public generally the necessity of the study of architecture.

Gas.—The Wisbech gas consumers being dissatisfied with the gas contractor who supplies the town, have had a public meeting and resolved to form a new company, of limited liability, under which they hope to be able to give a better supply at a considerably reduced price. Mr. Malam, the contractor, by his agents, has announced a reduction in price from 5*s.* 10*d.* to 5*s.* commencing on the 15th of December. The new gas company, however, we hear, have agreed with almost all the existing gas consumers (who have signed an undertaking to take gas of the company for seven years) at 4*s.* 6*d.* per 1,000; and the company further undertake, after dividing 8 per cent. amongst the shareholders, to distribute the surplus profits as a bonus to the gas consumers. The new company will make the trade in fittings entirely free. There is said to be no reason to believe that any reduction of price on the part of Mr. Malam will induce the promoters of the gas company to relax their efforts.——The Evesham Gas Company have resolved to reduce the price of their gas to 7*s.* 6*d.*——A gas company is being formed for the purpose of lighting the increasing town of Codnor.——There being an escape of gas in the "Beethoven Concert Room," in Harley-street, Cavendish-square, a gas-fitter stupidly inserted a light under the boarding of the floor above, and an explosion took place, blowing down the ceiling of the concert room and smashing the chandelier, besides injuring other rooms.

An India-rubber Hotel.—A curious "Yankee notion" has recently been imported to this side of the Atlantic. It promises to settle the long controversy of hotel discomfort, by—carrying your hotel with you. The *hôtel à la tortoise* contains three rooms—parlour, bedroom, and kitchen. The utensils for cooking, &c. are separately boxed. It is warranted weatherproof, and arrangeable in ten minutes.

The Local Board of Worthing and their Surveyor.—A committee having reported to the Local Board at Worthing on some alleged acts of insubordination and disrespect on the part of their surveyor, Mr. S. E. Hyde, and recommended his dismissal; and a letter having been read from Mr. Hyde on the subject; it was resolved, by a majority of four out of seven, that the surveyor be retained.

Architectural Photographic Association.—The committee of this association state, in a circular, that they have made arrangements by which the second exhibition of photographs will be opened at the Gallery of the Old Water-colour Society, in December next, at which subscribers can choose without restriction the prints which they may wish to possess, and that to enable subscribers in the country to make their selections, illustrated catalogues of the subjects will be given to the local honorary secretaries. It appears that in addition to photographs from almost all the former contributors, and from other artists, the whole architectural collection of Macpherson, of Rome, and Cimetta, of Venice, will be exhibited. The committee expect that both an earlier distribution of the subjects selected and greater certainty in the printing will be ensured.

Electro-telegraphic Progress.—A project for overland telegraphic intercourse between London and New York is said to be progressing. It is to be so organised that the sanction of the Governments of England, the United States, and Russia, will alone be necessary. The lines now in use as far as Moscow will be used, thence wires will be established direct to Behring's Straits, with repeating stations at proper distances. The entire length of the telegraphic line will be about 8,000 miles, and it is estimated that communication will be made between the termini in four hours and a half—that is, between New York and London. From Behring's Straits it is to proceed from island to island to Vancouver's Island and San Francisco. The entire marine distance will be under 2,000 miles, and no length of submarine wire will exceed 500 miles.——The French engineers, it seems, positively declare that "no telegraphic communication whatever has ever taken place between Valentia and Newfoundland." "The French engineers," however, are by no means so sceptical as our own Lieut. Higginson, who declares that the line never was laid.——It is understood that Government are seriously entertaining the question of laying a cable from our shore to Gibraltar in one stretch, a distance of 1,000 nautical miles, and thence to Malta, there to join the existing Malta Corfu line.——Ceylon is now joined to India by a submarine cable, and before the end of 1859 the gap between Corfu and India will probably be supplied by electric cable, so that London and Peshawur will be within speaking distance.

A Gas-meter for St. Paul's.—A great meter has just been fixed in St. Paul's Cathedral, in order to register the gas supplied for the illumination of the dome area from above during the evening services, after the 17th of November next. The meter will, it is estimated, pass 6,000 cubic feet of gas per hour, and it is nearly 20 feet in circumference. The corona of the dome is already fitted with pipes, having several thousand projecting nipples from which jets of flame will issue, these being the same as were originally laid round the plinth of the Whispering Gallery for the Duke of Wellington's funeral.

Birkenhead Docks. — Sir: I beg to correct the inference to be drawn from a statement which has been going the round of the papers, that Mr. Wm. McCormick had succeeded in taking the contract of the Birkenhead Docks, which would amount to one-and-a-half million of money. The contract taken by Mr. McCormick is only for the excavations, at a schedule price of 1*s.* per cubic yard, which will in all probability be under 200,000*l.* The whole of the extensive masonry-work is carried on under the superintendence of Mr. John B. Hartley, C.E. by day-work, and the men are paid by the Mersey Harbour Board. The contract for the excavations for deepening the great float was completed last May, by Messrs. G. Thomson and Co. with great credit, and three months before their specified time.

W. B.

Builders' Benevolent Institution.—The dinner in aid of this institution took place, as announced, at the London Tavern, on Thursday last, and passed off very satisfactorily. We shall give a report of the proceedings in our next.

Renewal under Bishops' Leases.—It may be useful to note the fact, that on the 27th of last month a case was heard before the Sheriff of Middlesex, at his Court in Red Lion-square, in which the question of tenant's right of renewal under Bishops' Leases came in question. The case was that of White against the Hampstead Railway Company. Valuable evidence was given. Mr. Tite and others were examined. The question involved, though often discussed, is not yet actually decided.

Successful Working of the Bessemer Process of Steel Manufacture.—From a letter in the *Daily News*, written by a Swedish ironmaster, Mr. G. F. Goransson, it appears that the Bessemer process of converting molten pig iron into steel without additional fuel, and in a few minutes, by the infusion of an air blast, has, after various costly failures, been successfully put into practice on the great scale in Sweden, and precisely as Mr. Bessemer proposed or instructed. Mr. Goransson, when the news "spread like a huge wave over the whole Continent of Europe," hurried over to England, witnessed Mr. Bessemer's experimental exhibition at Baxter House, and on his return home immediately set to work, and allowed no failure to daunt him till the process became familiarized to his workmen and himself; and "so completely have we accomplished this object," says he, "that we now make several hundred large ingots of cast steel in succession without a single mishap or failure of any kind. The steel can be made either hard, medium, or soft, at pleasure. It draws under the hammer perfectly sound and free from cracks, flaws, or faults of any kind, and has the property of welding in a most remarkable degree. Steel so made has now been manufactured into cutlery of the first quality, and into every variety of tools for the engineer, as well as for boiler plates of large dimensions. Our firm has now entirely given up the manufacture of bar iron, which it had carried on for so many years, and our blast furnaces and tilt mills are now wholly employed in making steel by the Bessemer process, which may, therefore, be now considered an accomplished commercial fact, which can no longer admit of question on theoretical grounds; and it is both with pride and pleasure that I find that our firm in Sweden has been the first to have carried out Mr. Bessemer's invention to its fullest extent, by producing ingots of cast steel of most excellent quality from the molten crude iron, within ten minutes of its leaving the blast furnace, wholly without manipulation or the use of fuel, and also without ever having had recourse to any one of the numerous plans that have been patented by others, under the idea of improving Mr. Bessemer's most simple and effective process. The loss of weight, including the carbon and other impurities given off, varies from 12 to 15 per cent. or about one half of the waste incurred in the old system of making bar iron in Sweden." By its means he can "produce annually more than 1,000 tons of so valuable an article as cast steel with the same quantity of fuel only as is now consumed in the production of 500 tons of bar iron by the process now in general use."

TENDERS.

For schools at Southall, for the parish of Marylebone:—

Denton	£10,795 0 0
Higgs	10,500 0 0
Rawlance	10,482 0 0
Wood	10,339 0 0
Mathews	10,287 0 0
Nye	10,285 0 0
Roper	10,100 0 0
Rhies and Son	9,975 0 0
Adamson	9,893 0 0
Walker and Neeve	9,884 0 0
Longmire and Burge	9,800 0 0
Hill	9,721 0 0
Hack and Son	9,650 0 0
Stiff and Co.	9,489 0 0
Rowe	9,436 0 0
Stevenson	9,323 0 0
Bowley	9,150 0 0
Mc Lennan and Bird	9,120 0 0
Rudkin	9,100 0 0
Dove	8,897 0 0
Sherren	8,839 0 0
Purkiss (accepted)	8,691 0 0

For alterations and additions to the Castle Tavern, corner of Gresham-street and King-street, for Mr. John Crawford. Messrs. Tiliott and Chamberlain, architects. Quantities not supplied:—

Hawtrey and Son	£951 10 0
Wells	933 0 0
Brass	908 0 0
Brown and Co.	786 0 0
Day	783 0 0
Lawrence and Sons (accepted)	769 0 0

For the erection of four warehouses at the west end of Cheapside, for Messrs. Faudel and Phillips. Messrs. Tiliott and Chamberlain, architects:—

Rider	£6,100 0 0
Holland and Co.	5,549 0 0
Brass and Son	5,437 0 0
Patrick and Son	5,345 0 0
Ashby and Sons	5,250 0 0
Hollings	5,210 0 0
Piper and Son	5,087 0 0
Myers	4,987 0 0
Nicholson and Son	4,940 0 0
Lawrence and Sons	4,940 0 0
Brown and Robinson	4,875 0 0
Jay (accepted)	4,686 0 0

For the erection of general market and shops, Aldershott. Mr. T. Goodchild, architect, Guildford:—

G. Myers	£2,417 0 0
Speakman and Haines	2,122 0 0
Galsworthy	2,012 0 0
Martin	1,700 0 0

For alterations, 2, Queen-street, Mayfair, for Mr. John Heath. Mr. George Morgan, architect:—

Piper and Son	£1,430 0 0
R. Lawrence	1,395 0 0
Dove, Brothers	1,375 0 0
Jackson and Shaw	1,279 0 0
I'Anson	1,244 0 0
Macey	1,185 0 0
Stevenson	1,150 0 0

For a detached house on the Conservative Land Society's Estate, Ealing, for Mr. Fielding. Mr. George Morgan, architect:—

Harding (New-cross)	£698 0 0
Brunsden (Brentford)	570 0 0
Pool (Hounslow)	563 0 0
Wakelin (Ealing)	527 0 0
Grover (Ealing)	518 0 0
Gray	495 0 0
Mildwater	477 0 0
Easton (Hounslow)	470 0 0
Nye (Ealing)	429 0 0
Hancock (Ealing)	415 0 0
Kent (Bermondsey)	410 0 0
Walker	389 0 0
Bray	370 0 0
Webb (Stratford)	328 0 0

For a cottage at New Malden, Surrey, for Mr. C. Buckler. Mr. W. P. Griffith, architect:—

Fowler (London)	£290 0 0
Gilbert (Malden)	265 0 0
Patman (Kingston)	247 0 0

For alterations and painting at the offices of the East London Union, No. 1, Devonshire-square. Mr. H. Jarvis, architect:—

Heath	£280 0 0
Pickering and Co.	279 0 0
Ashby and Sons	261 0 0
Ashby and Horner	250 0 0
Nind	238 11 0
King	229 10 0
Heeps (accepted)	222 10 0

TO CORRESPONDENTS.

R. H. C.—E. H.—W. D. M.—J. W. (let us know the date).—H. and P.—E. R. R.—J. P.—G. M.—M. J.—J. H.—W. E.—Genl. P.—R. J. L.—J. C.—T. G.—R. P.—A. H. B.—Pelham (is in type).—W. P. (we have already expressed our opinion on this question).

"Books and Addresses."—We are forced to decline pointing out books or finding addresses.

☞ *NOTICE.—All Communications respecting Advertisements, Subscriptions, &c. should be addressed to "The Publisher of the Builder," No. 1, York-street, Covent-garden. All other Communications should be addressed to the "Editor," and* NOT *to the "Publisher."*

Post-office Orders and Remittances should be made payable to Mr. Morris R. Coleman.

ADVERTISEMENTS.

TO ARCHITECTS, ENGINEERS, COUNTY, BOROUGH, and DISTRICT SURVEYORS.—MR. L. FLOWER, C.E. and Architect, transacts TOWN AGENCIES, selects Assistants, and renders PROFESSIONAL AID generally. Surveys, Sections, &c. Maps, Plans, Drawings and Tracings. Perspectives drawn or tinted, &c. by the first artists only.—36, Charles-street, St. James-square, London, S.W.

RADNORSHIRE TURNPIKE ROADS. SURVEYOR WANTED.—The Radnorshire County Roads Board will, at an adjourned Meeting to be held at Presteign, on SATURDAY, the 13th day of NOVEMBER next, at ELEVEN o'clock, proceed to the ELECTION of a SURVEYOR of the Turnpike Roads of the County. Candidates for the office are requested to send testimonials of their qualification to the Clerk of the Board on or before the 8th of NOVEMBER. The salary will be 135*l.* per annum, and the person appointed will be required to devote his whole time to the duties of his office. Responsible security in the sum of 200*l.* will be required. Due notice will be given to those candidates who will be required personally to attend.

WM. STEPHENS, Presteign,
October 21st, 1858. Clerk to the Board.

SURVEYING DEPARTMENT of the CONSERVATIVE LAND SOCIETY.—Applications for the SURVEYING DEPARTMENT, accompanied with Testimonials, must be addressed to the Executive Committee, under cover to the Secretary, CHARLES LEWIS GRUNEISEN, Esq. 33, Norfolk-street, Strand, W.C. on or before MONDAY, the 15th of NOVEMBER.

A MASTER BUILDER is in want of an ENGAGEMENT. He is possessed with a thorough practical and extensive knowledge of the business, and can give first-class references.—Address, AVON, Post-office, Oxford.

WANTED, a DRAWING CLERK, in a Decorator's Office, who understands Gothic Detail. He would be required to do bookkeeping, as well as assist in making designs.—Address, stating age and salary required, to H. W. Office of "The Builder."

WANTED, a sober, steady PERSON, qualified to WORK MILL-SAWS—viz. circular saws, rack and hand benches, and frame-saws. He must be competent to gullet, hammer, sharpen, set, and rack the saws, and direct the management of the machinery and the mill generally.—Address, C. D. Post-office, Llanelly, Carmarthenshire, stating terms.

TO BUILDERS, &c.

WANTED, by a Young Man, who is practically acquainted with bricklaying, and who has a thorough knowledge of drainage works, a SITUATION as TIMEKEEPER, &c. Good testimonials and references.—Address, X. Z. Crawford Arms, Baker's-row, Clerkenwell.

TO ARCHITECTS, SURVEYORS, &c.

WANTED, by the Advertiser, a RE-ENGAGEMENT. Has been seven years in the profession. Salary not so much an object as employment.—Address, X. X. Office of "The Builder."

TO BRICKMAKERS' FOREMEN.

WANTED, a FOREMAN, with a thorough practical knowledge of BRICKMAKING and all its branches, to undertake the management of a Brickfield in the South of Europe.—Apply by letter, stating full particulars, to C. F. 30, Doughty-street, London, W.C.

WANTED, a respectable stout LAD, 14 years of age, as IN-DOOR APPRENTICE to the business of TURNER IN GENERAL, and where all description of builders' turning is done. He will have full employment, and work under the care of the master. Premium required.—Mr. FROCKTEE, 12, Dean-street, Westminster, near the Abbey.

WANTED, a good PAINTER, GLAZIER, and PAPER-HANGER. A steady hand may hear of a good situation by sending full particulars, by letter only, addressed to M. B. care of R. Rowell, esq. 18, Lincoln's-inn-fields.

TO BUILDERS' FOREMEN.

WANTED, an experienced Man, to SUPERINTEND the ERECTION of a BUILDING in London; he must have a general knowledge of the several trades.—Address, O. F. Office of "The Builder."

WANTED, in the Office of an Architect and Surveyor in the country, a young gentleman as junior ASSISTANT or IMPROVER. He must be competent to make a fair drawing and assist in the usual routine of a country practice. As it is necessary he should board and lodge in the house, no salary will be given.—Address W. W. 2, Millman-street, Bedford-row, W.C.

WANTED, in a small Mechanical Workshop, a Person to TAKE CHARGE of the STORE-ROOM, take an account of workmen's time (keeping their hours), and make himself generally useful.—Apply by letter only, stating age, previous occupation, and salary expected.—Address, S. and M. Office of "The Builder."

TO SAW-SHARPENERS.

WANTED, to work, in the Brighton Saw-Mills, a respectable MAN, who thoroughly understands his business, and can sharpen upright or circular saws, and take charge of a deal frame.—Apply to J. IRELAND, Builder, Bond-street, Brighton, stating age and terms.

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